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MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

MAY AND JUNE, 1873.

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MONTHLY REPORT.

CONDITION OF THE CROPS IN JUNE.

WHEAT.

The returns for the month of June have been carefully examined, and a tabular exhibit of the results will be found below. From the following abstract it will appear that of 753 counties reporting in regard to winter-wheat, 283 report an acreage equal to that of last year; 263 an increased and 207 a diminished acreage. Of 300 counties reporting spring-wheat, 172 report an increased acreage; 77 an acreage equal to that of the previous year, and 51 a decrease. In New England, Maine reports a decrease of 10 per cent., Vermont 24 per cent., and Massachusetts 3 per cent. in winter-wheat. In spring-wheat they are all below last year except Maine, where the increase is 5 per cent. In the Middle States the acreage of winter-wheat is somewhat above that of last year. New York and Pennsylvania report a decreased acreage of spring-wheat, amounting to 5 per cent. In the South, Georgia is the only State reporting spring-wheat; the acreage here decreased 7 per cent.; the acreage of winter-wheat varied from 92 per cent. in South Carolina, Georgia, and Alabama, to 117 per cent. in Texas. North of the Ohio River the acreage of winter-wheat has increased to some extent, while that of spring-wheat exhibits a very considerable enlargement. The percentages of winter and spring-wheat, respectively, compared with last year, are, in Ohio, 102 and 85; Michigan, 105 and 109; Illinois, 94 and 127; Wisconsin, 104 and 101. Indiana reports an acreage of winter-wheat equal to last year's, but makes no returns of the spring-sowing. West of the Mississippi River the percentages are as follows: Minnesota, 102 and 134; Iowa, 85 and 121; Missouri, 98 and 125; Kansas, 138 and 141; Nebraska, 101 and 173. On the Pacific coast, California reports 111 and 115; Oregon, 107 and 110.

Acreage of wheat in 1873.

States.	Winter-wheat.			Spring-wheat.		
	Counties above average.	Counties average.	Counties below average.	Counties above average.	Counties average.	Counties below average.
Maine	.....	3	1	7	3	1
New Hampshire	1	3	1	1	4	2
Vermont	.....	1	3	1	5	4
Massachusetts	.....	3	1	.....	1	2
Rhode Island	.....	.....	.....	.....	.....	.....
Connecticut	1	3	.....	.....	1	1
New York	.....	19	8	3	10	6
New Jersey	1	6	1	.....	.....	.....
Pennsylvania	10	22	5	2	3	5
Delaware	1	2	.....	.....	.....	.....
Maryland	3	12	.....	.....	.....	.....

Acreage of wheat in 1873—Continued.

States.	Winter-wheat.			Spring-wheat.		
	Counties above average.	Counties average.	Counties below average.	Counties above average.	Counties average.	Counties below average.
Virginia	23	21	20	.....	.....	.....
North Carolina	11	17	11	.....	.....	.....
South Carolina	1	10	4	.....	.....	.....
Georgia	10	12	24	.....	5	3
Florida	.....	.....	.....	.....	.....	.....
Alabama	2	4	9	.....	.....	.....
Mississippi	.....	5	2	.....	.....	.....
Louisiana	.....	.....	.....	.....	.....	.....
Texas	18	6	2	.....	.....	.....
Arkansas	11	3	7	.....	.....	.....
Tennessee	12	16	10	.....	.....	.....
West Virginia	8	12	3	.....	.....	.....
Kentucky	8	16	10	.....	.....	.....
Ohio	9	14	7	.....	2	5
Michigan	17	12	2	7	5	3
Indiana	16	17	15	.....	.....	.....
Illinois	11	12	19	20	7	3
Wisconsin	8	9	3	12	11	4
Minnesota	2	4	1	20	.....	3
Iowa	5	3	3	39	7	2
Missouri	23	9	23	10	4	3
Kansas	25	1	9	25	6	2
Nebraska	5	1	1	14	.....	.....
California	14	2	2	6	2	1
Oregon	4	3	.....	5	1	1
Total	263	283	207	172	77	51

The following table shows the condition and prospects of winter and spring wheat, respectively, about the 1st of June. Three States—Rhode Island, Florida, and Louisiana—make no returns of wheat-culture whatever, while in many counties of other States this branch of farming is so inconsiderable as to excite no remark. Some of the counties reported grow both winter and spring-wheat. Of 751 counties reporting the condition of winter-wheat, 202 are above average, 168 full average, and 381 below. Of 286 counties growing spring-wheat, 103 are above average, 115 full average, and 68 below. Judging from the relative proportions of the above figures, the prospects of spring-wheat at this date appear more flattering than those of winter-wheat, the former showing 218 out of 286 counties full average or above, while in the latter favorable reports came from less than half. The character of the winter-wheat crop is pretty nearly determined, but the spring-sowing is just at the inception of its career, and has the vicissitudes of a whole season yet before it. From the reports already received an active campaign with insect enemies is foreshadowed in portions of our wheat-growing area, the result of which it is impossible to anticipate. A very great increase of acreage and an encouraging prospect of spring-wheat are indicated in the Northwestern States.

Condition of wheat June 1, 1873.

States.	Winter-wheat.			Spring-wheat.		
	Counties above average.	Counties average.	Counties below average.	Counties above average.	Counties average.	Counties below average.
Maine	1	3	.....	1	7	3
New Hampshire	4	.....	9	1	3	9
Vermont	2	1	1	2	4	4
Massachusetts	1	2	1	1	1	1
Rhode Island	.....	.....	.....	.....	.....	.....
Connecticut	2	2	.....	1	1	.....
New York	5	13	12	1	8	10
New Jersey	2	4	3	.....	.....	.....
Pennsylvania	32	5	10	1	3	6
Delaware	1	1	1	.....	.....	.....
Maryland	5	3	7	.....	.....	.....
Virginia	11	10	43	.....	.....	.....
North Carolina	4	9	26	.....	.....	.....
South Carolina	1	5	9	.....	.....	.....
Georgia	9	11	27	2	2	4
Florida	.....	.....	.....	.....	.....	.....
Alabama	1	6	8	.....	.....	.....
Mississippi	1	1	5	.....	.....	.....
Louisiana	.....	.....	.....	.....	.....	.....
Texas	7	1	17	.....	.....	.....
Arkansas	11	5	7	.....	.....	.....
Tennessee	8	6	24	.....	.....	.....
West Virginia	10	2	11	.....	.....	.....
Kentucky	4	14	19	.....	.....	.....
Ohio	10	7	13	.....	4	2
Michigan	6	4	21	1	8	6
Indiana	8	14	35	.....	.....	.....
Illinois	7	10	25	13	9	8
Wisconsin	2	4	14	10	10	7
Minnesota	1	2	5	8	10	4
Iowa	2	.....	9	22	18	8
Missouri	23	14	17	8	6	2
Kansas	17	10	8	17	14	2
Nebraska	3	1	3	8	4	2
California	5	2	11	2	2	5
Oregon	6	1	.....	4	1	2
Total	202	168	381	103	115	68

In June, 1872, the indications of the wheat-yield of the United States pointed to an aggregate of 220,000,000 bushels. The final estimates for that year, prepared for the annual report, as yet unpublished, amounted to 249,997,000 bushels, the subsequent conditions of growth being more favorable than they appeared just before harvest. This aggregate was but 11,000,000 below the extraordinary yield of 1869. The acreage of wheat reported is largely in excess of last year. Of winter and spring wheat combined, 340 counties report an acreage equal to last year's, 360 an increased, and 258 a decreased acreage. As to condition, 383 report full average, 305 above, and 449 below. Upon a careful estimate of all the conditions of growth as yet apparent, the wheat-prospect is at least as favorable as at this time last year, when the yield was estimated at 220,000,000 bushels. With equally favorable conditions for the remainder of the season, a crop of 250,000,000 bushels may be expected.

In New England the winter was generally favorable to winter-wheat, the snow in many localities affording an excellent shelter against atmospheric injuries. The general condition is above average, but in spring-wheat the balance appears to be in the other direction.

In the Middle States several instances of winter-killing are noted, but in other localities winter-wheat is much more promising, the condi-

tions of growth having improved since the opening of spring. Pennsylvania reports a heavy preponderance of counties above average; but in New York and New Jersey the general indications are not so favorable. Neither New Jersey nor Delaware report any spring-wheat, which branch of culture appears to be quite limited and below average in New York and Pennsylvania. On the whole, the wheat-crop of the Middle States is somewhat above average.

In all the South Atlantic and Gulf States the general condition of the crop is below average. Virginia reports 43 counties below average, to 10 full average, and 11 above. North Carolina 26 below, against 13 average and above; 8 counties in Georgia report some growth of spring-wheat, of which 4 are below average. Of the interior Southern States, Arkansas is above average, while Tennessee, Kentucky, and West Virginia are below. North of Ohio River the reports of winter-wheat are below average; Ohio shows 10 counties above average against 13 below; Michigan 6 above and 21 below; Indiana 8 above and 25 below; Illinois 7 above and 25 below; Wisconsin 2 above and 14 below. In spring-wheat, however, these States present a much more promising prospect. Illinois shows 13 counties above to 8 below; Wisconsin 10 above to 7 below.

West of the Mississippi, Minnesota presents in spring-wheat 8 counties above average to 4 below; Iowa, 22 to 8; Missouri, 8 to 2; Kansas, 17 to 2; Nebraska, 8 to 2. In winter-wheat these States show 45 counties above average to 44 below, with a large proportion of full average counties. On the Pacific coast, California reports 7 counties above and 16 counties below average; Oregon 10 above against only 2 below.

MAINE.—*York:* Wheat looks well.

CONNECTICUT.—*Hartford:* Covered with snow all winter; it came out good.

NEW YORK.—*Livingston:* Looking very poor. The winter was long and cold, with but little snow; badly winter-killed. *Wyoming:* Has improved very much in the last ten days. *Genesee:* Injured when spring opened; weather unfavorable since. *Ontario:* Badly winter-killed.

NEW JERSEY.—*Warren:* Very promising.

PENNSYLVANIA.—*Clinton:* Very promising. *Westmoreland:* Much winter-killed; growth very uneven. *Washington:* Winter-killed to some extent, but early rains pushed it forward, causing it to stool much better than for several years. *Union:* Winter-wheat looks splendid. *Montgomery:* Very promising. *Chester:* Doing well wherever there is a good stand. *Berks:* Looks remarkably well. *Bucks:* Looking unusually well. *Northumberland:* Looks unusually fine. *Lancaster:* Prospect for a good crop all over the county. *Cambria:* Beginning to show well. Spring-wheat very backward on account of the cold, wet spring. *Lycoming:* Looking remarkably well. *Greene:* Winter very hard on wheat. Spring favorable. *Fulton:* Very seriously injured by the fly, which has not been so bad for many years.

DELAWARE.—*Sussex:* Quantity sown very small; no spring-wheat. *Kent:* Badly winter-killed on low ground; looks well on land thoroughly drained; complaint of injury from the fly in some parts of the county.

MARYLAND.—*Saint Mary's:* The late May rains have greatly improved the prospect of wheat. *Howard:* Promises an average crop. *Washington:* Was very promising until within the last eight or ten days. The fly and joint-worm are now making great destruction. *Caroline:* Looking well except on low and wet land, where it is very badly winter-killed. Drilled wheat stood the winter better than that sown broadcast. The new red wheat from the Department very promising. Fultz wheat looking well. The winter hurt the Touzelle considerably. The Russian bearded white wheat (the second year from the Department) promises to be a great acquisition; it is quite hardy, standing the winter as well as any other variety. *Baltimore:* Crop presents a luxuriant appearance; slight injuries by the fly on late-sowed fields. *Cecil:* In many fields thin, but growing finely. *Queen Anne:* Winter-wheat now in bloom; heavy growth of straw, and promise of fine yield.

VIRGINIA.—*Botetourt:* Now looking well, but much of it winter-killed. *Powhatan:* Many complaints of fly in wheat; high lands will probably produce an average; low lands fall short. *Spottsylvania:* The crop has continued to improve; the plants very strong and healthy. *Pulaski:* Improving rapidly, but cannot make over one-third of a crop. *Fluvanna:* Has suffered great injury from winter-killing, also from spring-fly;

some early-sown very good, but general average bad. *Caroline:* Notwithstanding the severe winter, the Fultz and the Touzelle wheat promise a good yield. *Hanover:* The last winter was severe on our winter-wheat; consequently its condition is inferior to that of the former crop. *Lunenburg:* Prospect fair for an average crop. *Montgomery:* On northwestern exposures wheat was badly injured by extreme freezes in the latter part of winter—large bodies entirely killed; the cool, wet spring has been favorable, and the crop remaining improves beyond expectation. *Madison:* Improves since the last report, but looking badly still; much complaint of the fly. *Orange:* The cold, wet spring retarded the growth so as to afford every opportunity for depredation to the fly, which has been more destructive than for many years; the severe freeze in the early part of March also greatly thinned the plants. *Cumberland:* Looking badly; much of it winter-killed. *Culpeper:* Very much injured by fly and severe winter. Fultz wheat superior to any other variety. *Greeneville:* Only half a stand of wheat at the opening of spring, and now some fields are badly struck with rust; some drilled fields are looking well. *Halifax:* The Fultz wheat from the Department succeeds admirably; it is by far the best of all kinds, being early, hardy, and very prolific. *King George:* Has improved with refreshing rains, but many thin and bare spots remain; some reduced by fly. *Nelson:* Has improved very much since the 1st of May, but in some localities is now giving way rapidly to the ravages of the Hessian fly. *Clarke:* Prospect has improved very much since last report, and, although the severe winter and Hessian fly will prevent a full average crop, it will be better than that of last year. *Henrico:* Crop short—fully one-tenth. *Loudoun:* General complaint of fly in wheat. *Nansemond:* Considerably less wheat sown; many going into cotton. *Page:* The failure of our wheat-crop is owing in part to early sowing, it being very dry and warm in September; this gave the fly every advantage; it continued to work during the fall. *Prince George:* Rust has appeared on the blades, which must reduce the yield 15 per cent. *Rockingham:* Badly crippled by the fly and injured by the winter; cannot make a half-crop. *Washington:* Badly winter-killed. *Mecklenburg:* On the river-bottoms has been destroyed by freshets; on the high lands indifferent. *Grayson:* The hard freeze the 1st of March killed a large per cent. of the wheat; the favorable weather since is improving it very much. *Alexandria:* Considerably winter-killed; the frequent rains this spring have brought it out wonderfully; now remarkably good where there is a stand. *Chesterfield:* Injured to some extent by the continued rains of May. *Highland:* Greatly injured by winter-freezing. *Lancaster:* Looks remarkably well; no rust. *Westmoreland:* On well-drained upland winter-wheat above average; on low grounds and river-bottoms much winter-killed; rust has appeared on the blade, but not on the stalk; seems to be filling well; will be harvested by the middle of June.

North Carolina.—*Mitchell:* The Touzelle furnished by the Department is almost an entire failure; the Tappahannock looks better than any other variety. *Lincoln:* A severe frost on the 24th and 25th of April injured the wheat-crop. *Cherokee:* Froze out last winter worse than heretofore. *Davie:* Damaged by frost in April, and by wet in May; will not make more than three-fourths of a crop. *Hartford:* Bids fair to make a good crop. *Haywood:* Wheat winter-killed badly. *Rowan:* In low grounds badly damaged by high water. *Caldwell:* A large proportion of the crop destroyed by being winter-killed. *Ashe:* Badly injured by the winter freeze. *Anson:* Injured seriously by the wet spring. *Greene:* The extremely cold winter, cold, wet spring, and heavy rains have made the crop a failure. *Union:* Dry weather and heavy frost the last of April injured the wheat. *Polk:* The quality promising, but generally thin on the ground. *Montgomery:* Badly damaged by the frost April 26; also by the late heavy rains and freshets.

South Carolina.—*Greenville:* Wheat sown late last fall failed very much; that sown the first week in October will make a good crop. The straw is short. *York:* Suffered greatly from the intensely cold and variable weather of last winter. Where the stands are full, the crop is nevertheless a failure. *Union:* Now turning, and will be ready to reap by the 12th instant.

Georgia.—*Madison:* Thin and sorry. *Marion:* Clearer from rust than for many years. The Tappahannock wheat from the Department is doing well. The Touzelle does not suit this climate; is not worth gathering. *Floyd:* Badly winter-killed, thin, and low. *Cobb:* Crop very unpromising, owing to winter-killing and excessive rains. *Murray:* Worse winter-killed than I ever saw it before. *Jackson:* Killed out during the winter; poor stand and bad condition. *Sumter:* The Tappahannock wheat promises well. The Touzelle so far is extraordinarily fine—ahead of any wheat ever grown in this county.

Florida.—*Jackson:* The plant has matured fully, developing a fine, full, heavy head

Alabama.—*Saint Clair:* The Tappahannock wheat grows finely here. I think it is the wheat for the South. *Blount:* Prospect worse than for many years; stand thin straw short; two weeks later than usual, and therefore much danger of rust. *Calhoun:* Much later than usual; now beginning to ripen. *Randolph:* The Tappahannock, Red England, and Arnautka wheat the best in the county.

MISSISSIPPI.—*Dooly:* Very fine. *Granada:* Considerably damaged by late excessive rains, resulting in rust.

TEXAS.—*Blanco:* The crop, which was more promising than in any previous year, now entirely destroyed by late frosts and grasshoppers. *Bosque:* Badly damaged by frost on the 26th of March. *Hays:* The small quantity sown has been destroyed by grasshoppers. *Grayson:* The prospect poor before the hail-storm, May 16, which destroyed at least one-fourth the crop. *Palo Pinto:* Greatly damaged by grasshoppers; in fact, almost totally destroyed. *Titus:* Was supposed to be damaged by late freeze, but those who pastured late have a fine prospect for a heavy crop. *Dallas:* Our farmers are just beginning to harvest their wheat, and the yield will be above average. *San Saba:* The grasshoppers have destroyed the wheat, *Coryell:* The 1st of March, wheat promised a splendid yield, but on the 18th there came a terrible freeze, which killed almost everything green. Farmers think they will have something over half a crop. *Burnet:* Injured by frosts and grasshoppers. *McLennan:* Now being harvested. *Medina:* Winter and spring wheat entirely destroyed by grasshoppers; not a bushel will be raised in the county. *Hunt:* Prospects injured by continued heavy rains from the 17th to the 25th of May. *Williamson:* Promises better than average. *Gilmer:* Injured by drought.

TENNESSEE.—*Anderson:* One-fourth of the wheat froze out. *Loudon:* Have never seen so poor a prospect. *Sumner:* Crop promises well. *Smith:* Prospect has wonderfully improved within the month. *Jefferson:* Injured by freezing and wet weather: thin and short stems. *Montgomery:* Freezing out and late planting make a very thin stand. It is taking rust everywhere. Fultz wheat stood the winter well, and promises well. *Greene:* Much frozen out after winter closed, and otherwise unpromising. *Marion:* Crop worse than ever known. *Humphreys:* Much killed out by winter-freezes and high water. *Gibson:* Favorable season for wheat. *Giles:* Rather thin on the ground, but doing well. *Grainger:* A failure. *Hancock:* Considerably winter-killed.

WEST VIRGINIA.—*Mercer:* Winter-wheat badly frozen; crop cannot be anything like an average. *Jackson:* Winter-wheat badly frozen, but improving under the wet and cloudy spring. *Braxton:* Winter hard on all varieties except the Fultz, which stands remarkably well; prospects now encouraging. *Nicholas:* Wheat looks well. *Pendleton:* Fine weather bringing out the small grain. *Monroe:* Frozen out. *Tyler:* Much injured by frost. *Mineral:* Badly frozen out. *Harrison:* Badly winter-killed. *Pocahontas:* Winter-wheat fine on uplands.

KENTUCKY.—*Shelby:* Winter-wheat badly frozen out: looks well, though thin on the ground. *Laurel:* Wheat largely winter-killed; what is left looks well. *Taylor:* Wheat badly winter-killed. *Fayette:* Thin, but healthy. *Hardin:* Looks badly; heading low. *Lincoln:* No improvement. *Graves:* Damaged 25 per cent. by wet. *Edmonson:* Badly winter-killed in many places: *Nicholas:* Winter-wheat looks badly; thin on the ground, and liable to rust; cannot be more than half a crop; no spring-wheat sown.

OHIO.—*Gallia:* Bad stand generally, but some very good; considerable lodging. *Jackson:* Never looked better. *Athens:* Short crop of winter-wheat sown on account of dry fall; crop now promising. *Warren:* Grains excellent. *Carroll:* Wheat better than was expected. *Sandusky:* Winter-wheat badly injured by wet spring. *Adams:* Wheat has thickened up very rapidly, and is now heading out.

MICHIGAN.—*Kalamazoo:* Winter-wheat badly frozen out; what escaped is nearly average. *Branch:* Wheat not doing well; not over three-fourths of a crop; harvest will be twenty days late. *Genesee:* Decreased acreage of spring-wheat. *Oakland:* Wheat growing well, but does not realize expectations. *Calhoun:* Looks well where not winter-killed. *Washtenaw:* Below average. *Barry:* Wheat severely frozen. *Cass:* Many patches winter-killed; others entirely escaped injury. *Clinton:* Wheat badly winter-killed.

INDIANA.—*Decatur:* Wheat did well up to the melting of snow in February, but one-half was killed by the hard cold weather of March; the warm showers of May have caused it to stool out very freely. *Grant:* Wheat quite tall. *La Porte:* Wheat recovering from injuries of winter. *Noble:* Wheat that has escaped injuries of winter is doing well. *Huntington:* Wheat badly winter-killed; spring-wheat looks well. *Carroll:* Wheat improving. *Ripley:* Wheat growing fast and beginning to head; in danger of rust. *Hamilton:* Earlier sown wheat beginning to head. *Pike:* Spring-wheat from the Department grows tall and looks well, but threatens to fall down. *Brown:* Quite unpromising, through dry fall, late sowing, and unfavorable spring. *Dearborn:* Wheat varies, but is, on the whole, 15 per cent. below average; that sown on corn-ground limited by the bad condition of the fields. *Newton:* No spring-wheat sown, as it is usually eaten by chinch-bugs, which are thought to propagate more readily in spring-wheat and barley than in any other grain; winter-wheat almost entirely winter-killed. *Parke:* Wheat sown early in September is very good, but ten days late; about six-tenths of the wheat was sown in October, and will scarcely repay the seed and labor. *Dubois:* Thin; some fields plowed up for corn.

ILLINOIS.—*Kankakee:* Winter-wheat killed by extreme cold in April. *De Kalb:* Winter-wheat, both drilled and broadcast, nearly killed out; in many places not over 10 per cent. left. *Winnebago:* Increased proportion of spring-grain. *Pope:* Badly winter-killed; not over a half-crop. *Williamson:* Poor stand of winter-wheat. *Jersey:* Growing very rank. *Wabash:* Rank growth; on rich soils it will lodge badly. *Randolph:* Prospect good; spring rains have lengthened the straw. *Saint Clair:* Probably not over a half-crop will be thrashed; harvest will be two weeks late, and late harvests have never been copious. *McLean:* More spring-wheat would have been sown if seed had been accessible. *Ogle:* Winter-grain largely winter-killed. *Perry:* Chinch-bugs in the wheat. *Putnam:* Winter-wheat mostly winter-killed. *Scott:* Wheat drilled in early looks well; broadcast nearly all winter-killed. *Henry:* Spring-grain good. *Hancock:* Crops mostly thin. *Bond:* Largest and best crop ever grown; earlier sown fields well headed but beginning to lodge.

WISCONSIN.—Large breadth of winter-wheat sown, but 60 per cent. of it winter-killed. *Juneau:* Spring-wheat promises an abundant crop; winter-wheat badly killed out. *Jefferson:* Badly winter-killed. *Walworth:* Small grain backward, but green and promising. *Dodge:* About 25 per cent. of the winter-wheat re-sown on account of winter-killing; most of the residue looks well. *Fond du Lac:* Spring-wheat on the prairies destroyed by an insect: in the openings the soil is more compact and furnishes less scope of mischief. *Sheboygan:* Winter-wheat largely winter-killed, and replaced with spring-wheat. *Calumet:* Winter-wheat unpromising. *Waupaca:* Winter-wheat extensively sown, but without regard to condition of soil: hence 75 per cent. re-sown with spring-wheat. *Brown:* Winter-wheat killed to some extent.

MINNESOTA.—*Faribault:* Spring-wheat impaired by excessive rains. *Dodge:* Wheat sown in March: some of it looks remarkably well; wheat acreage double that of all other grain. *Steele:* May favorable for grain. *Winona:* Increased acreage of winter-wheat, of which three-fourths were winter-killed. *Cottonwood:* Looks well. *Goodhue:* Spring-wheat sown late but promising.

IOWA.—*Clinton:* Winter-wheat all killed. *Powieshiek:* All sorts of grain backward. *Muscatine:* Badly winter-killed. *Louisa:* Fall-wheat badly frozen out. *Marion:* Wheat badly winter-killed: much of the ground replowed; winter-wheat all killed, but little sown. *Delaware:* Weather good for small grain. *Johnson:* Wheat looks well. *Ringgold:* Winter-wheat badly winter-killed; spring-wheat very promising. *Howard:* Wheat wintered in the stack and thrashed this spring did not grow well; some fields had to be re-seeded: wheat generally is stooling finely and will give heavy crops of straw. *Buena Vista:* Wheat a fine stand, but beginning to turn yellow. *Des Moines:* Winter-wheat nearly all winter-killed: drilled as bad as broadcast. *Mitchell:* Small grain looks well: very little winter-wheat raised. *Lee:* Spring opened favorably for small grain, which was sown in good condition, and looks well.

MISSOURI.—*Benton:* Chinch-bugs threatened to destroy the wheat in some sections. *Polk:* Very fair crop promised. *Crawford:* Full average. *Caldwell:* Winter-wheat reported killed in exposed localities. *Boone:* Chinch-bugs just begining to destroy the wheat. *Cass:* Very little spring-wheat; winter-wheat looks fine, promising a large crop. *Greene:* Small grains greatly improved by late fine weather, but harvest will be two weeks late. *Vernon:* Wheat badly beaten down by hail. *Moniteau:* Looks finely. *Franklin:* Chinch-bug destructive on upland clay soils. *Stone:* Damaged by frost and Hessian fly; crop twelve to fifteen days late. *Perry:* Generally thin. *Pulaski:* Attacked by chinch-bugs. *Nodaway:* Wheat looks splendid. *Jasper:* Chinch-bugs destructive. *Maries:* About a third of the winter-wheat winter-killed and plowed up; a third badly injured by the Hessian fly; another third looks fine. *Jackson:* Winter-wheat never gave fairer promise.

KANSAS.—*Doniphan:* Wheat promises an abundant yield. *Washington:* Spring-wheat unusually good: rain greatly improved winter-wheat. *Wabaunsee:* Touzelle wheat a failure; will not stand the weather. *Cherokee:* Harvest in fifteen or twenty days: drilling preferable, and that very early. *Riley:* Winter-wheat but two-thirds of a stand: some fields entirely killed. *Neosho:* Looks fine, but is full of chinch-bugs. *Labette:* Fine; no chess: few complaints of insects. *Linn:* Winter-wheat very fine. *Republic:* Badly winter-killed, and largely plowed up for corn. *Marion:* Spring-grain never looked better. *Bourbon:* Chinch-bugs in wheat. *Clond:* Spring-wheat replacing winter-wheat, frozen out. *Coffey:* Harvest will be two weeks late. *Reno:* Wheat sown in August looks well; later sowing almost a failure.

NEBRASKA.—*Burt:* Winter-wheat entirely frozen out. *Cass:* Wheat growing very rank. *Gage:* Wheat lodging badly. *Thayer:* Badly winter-killed, especially where sown after September 15. *Cuming:* Wheat attacked by the red-legged locust.

OREGON.—*Lane:* Large amount of wheat sown. *Clackamas:* Wheat had a fine start, but was cramped by late dry weather. *Douglas:* All kinds of small grain promise splendid crops.

CALIFORNIA.—*Alameda:* Grain injured by frost and drought, there being no rain since February; thousands of the best acres of wheat will not pay for harvesting. *Contra Costa:* Superior on heavy, well-cultivated soils, but on sandy and late-sown

fields only a half-crop will be raised. *Stanislaus:* Crop but one-third of an average. *Mendocino:* Late-sown grain still looks well, but will soon show the effects of drought. *Placer:* Wheat-crop threatened by drought.

COTTON.

Twelve months ago an increase over the previous year in the cotton-area was reported in every State; an increase over that of last year is now reported in every State. The percentage of increase in a State, as found by dividing the aggregate of increase in counties by the number reported, is, as a rule, too high, because, almost always, the largest per-cent. of increase will be from counties having a comparatively small acreage. But, reckoned in that rough way of estimating, the increase indicated is, in Virginia, 23 per cent.; North Carolina and Georgia, 14; South Carolina, 2; Florida, 3; Alabama, 9; Mississippi and Louisiana, 4; Texas, 31; Arkansas, 10; Tennessee, 15. This makes the average increase in the cotton States, reckoned in the same way, nearly 12 per cent. The per cent. of increase reported last years was, in North Carolina and Arkansas, 16; South Carolina, 9; Georgia and Tennessee, 12; Florida and Mississippi, 10; Alabama and Louisiana, 11; Texas, 18; and the average, throughout the cotton States, approximating 13. It will be noticed that, in both years, Texas makes the largest relative increase. Our reports indicate a prevalent increase in the relative amount of fertilizers used. The acreage *cultivated* will fall considerably below that *planted*. A cold, backward spring, causing much seed to rot in the ground; a very wet May, preventing work, and increasing the subsequent demand for it; and the impossibility of obtaining sufficient labor to subdue, over the whole breadth sown, the excessive weeds and grass consequent upon the extraordinarily wet season, conspire to make this result inevitable. Returns concur in placing the crop from two to three weeks later than usual.

Florida reports a condition 2 per cent. above annual average; all the others fall below. Virginia and Alabama, 7 per cent.; North Carolina, 15; South Carolina, 12; Georgia and Louisiana, 6; Mississippi and Arkansas, 8; Texas, 14; Tennessee, 10. But it will be seen, from the extracts below, that very generally the weather, in the last days of May, was favorable, and there was a hopeful prospect that the condition would rapidly improve.

Another part of this report will show that worms and caterpillars have made an early appearance at various points, and are causing considerable apprehension of destructive ravages.

Virginia, from which four counties reported the culture of cotton last year, reports eight this year, and an increase of acreage in all except Patrick, Chesterfield, and King William, in which it is unchanged. In Sussex and Nansemond the increase is 50 per cent.; in York, 70.

Nansemond: Many going into cotton; the crop very late. *Prince George:* The acreage has been increased, but the cold, heavy rains have caused the seed to come up badly, and the plant does not look thrifty. *Southampton:* The acreage greatly increased, from the fact that the pea-nut crop has been almost abandoned, and cotton substituted.

From the thirty-two counties reporting from North Carolina, Catawba, Cumberland, and Union report a decrease in acreage; Wake, Tyrrel, Iredell, Yadkin, Anson, and Montgomery, the same as last year; the others, an increase; Lincoln and Granville, 100 per cent.; Lincoln, Gates, Randolph, Stanly, and Martin return average condition; Polk, 25 per cent. above; all the others below.

Lenoir: The heaviest rain we have had for many years, on the 21st of May, washed up the cotton, which will have to be replanted. *Chowan:* Looks bad; too cold and wet; great complaint of seed rotting in the ground; numbers have plowed up and planted again. *Pitt:* Plant looks bad, but present warm weather is bringing it out. *Bertie:* Cotton that was planted early enough to come up by the 1st of May has suffered much from the ants and "Collard worms," and has required replanting. *Hertford:* Planting much delayed by excessively rainy spring; crop looks well. *Cumberland:* Backward and bad stand. *Franklin:* Large quantities of fertilizers have been purchased and applied chiefly to cotton. *Sampson:* Freshet after freshet has filled our streams, so that the low banks are yet under water in many districts; our cotton-crops are in bad order; bad stands have caused many to plow up and plant again. *Rowan:* Grassy and sickly-looking. *Beaufort:* The prospect gloomy; cool wheather and heavy rains, during May, caused the seed to come up badly, and much of that which came up is dying out. *Anson:* Seriously injured by the remarkably wet spring. *Greene:* Nearly all killed by frost, April 25. *Perquimans:* More planted than last year. Cold and rain from the 1st to the 20th of May caused most of the early planted to be lost. The replanted not yet up. *Polk:* More planted and more advanced than last year. *Jones:* Early killed by frost. Owing to cold rains, cotton has died out, and in some places farmers have planted over more than once, making the crop very late. *Stanly:* The growth on hand, all produced since the frost in April, in very promising condition. *Bladen:* Looks sorry.

Among the counties reporting from South Carolina, ten return a small increase in acreage, and two, Barnwell and Marlborough, a small decrease. Union and Richland report average condition; York, 6 per cent. and Fairfield 25 per cent. above; the remainder less than average.

Darlington: Killed by frost and ice, April 26. Much to be replanted; two weeks later than usual. More fertilizers by 20 per cent. than usual. *Fairfield:* Good stand; much better than last year, but recently injured by too much rain. *Greenville:* Seed germinated very slowly; the stand, so far, very bad. *Williamsburgh:* Frosts killed the early cotton; the rains have prevented work fully one-fourth of the time; we have been unable to plow or hoe from the excessively wet and boggy condition of the land. Now the cotton is very grassy, and with a scarcity of labor it will be impossible to put it in growing order in time to make even a moderate crop. *Orangeburgh:* Four weeks later than last year, and injured by heavy rains. *York:* Looking well, but, owing to two weeks of rain in the latter part of May, it has not been well worked. Some fields have been abandoned on account of the grass. Many plowed up the crop—grass and all—as the best means of exterminating the grass, and replanted. The plants are vigorous, stands good, and, where labor has been sufficient to keep up with the grass, the crop promising. *Richland:* Stand generally very good. The grass is getting ahead of the *poor* farmer, but the wide-awake ones have no uneasiness. *Newberry:* The killing frost of April 26 destroyed much of the early cotton. Stands planted later are good, but the grass has destroyed crops in much of the wet cotton-lands. *Marion:* Bad stands and "ruinously" in the grass. If it is ever redeemed, it will be a triumph of free labor. *Chester:* Good stands were up May 15. The plant died out on sandy soils on account of excessive rains. Many of the fields present the appearance of luxuriant meadows; the stands will be reduced to three-fourths, and some to one-half, of a regular stand, by cleaning out the grass. *Marlborough:* The early planted killed by frost April 26; replanting went on until the grass forced planters to abandon it, and, with too much rain and no reliable labor, it has been a hard struggle with bad stands of cotton and flourishing stands of grass. *Edgefield:* Cannot be worked as it should be on account of rain, but prospect better than last year. *Union:* Pretty fair stand, but much grass, owing to increased acreage, heavy rains, and over-cropping.

Fifty-three counties are reported from Georgia. Dooly, Richland, Schley, and Troup return each a decrease in acreage of 5 per cent., and Decatur of 10 per cent. Twelve counties return the same as last year; the remaining thirty-six report an increase; Gordon, of 100 per cent.; Catoosa, Cobb, and Walker, of 50; Forsyth, of 40; and Sumter, of 30. Twenty counties return for condition 100, or average; Worth, 130; Twiggs, 125; Whitfield, 120; Butts and Hart, 110; Douglas, 105; and Spalding, 103. Six return a condition of 80, 7 of 90, and 6 of 95; the others reported range between 60 (Laurens) and 98.

McDuffee: Last year a majority had finished chopping out their cotton at this date; this year very few have commenced, and a great many have not finished planting, owing to the cold, dry spring. *Lincoln:* An unusual amount of fertilizers bought and used on the cotton-crop this year. Plant late, but good stands. *Douglas:* Very good stands

Muscogee: Small and backward; bad stand in many places, in consequence of cool weather, heavy rains, and hail-storms. *Richmond:* Generally very grassy; labor scarce and much needed. *Calhoun:* Injured by hail-storms and cold weather. *Liberty:* Badly in grass and weeds from daily showers. *Laurens:* Materially injured by the heavy rains and cold weather; much of it has died from frost and cold winds. *Madison:* Good stand, though very late, owing to cold, dry spring. *Decatur:* Cotton-caterpillars seen on Flint River May 30. *Coweta:* In bad condition, owing to thirty-two days of wet weather; from present appearances, 20 per cent. of the crop will be lost. *Troup:* Very late cold weather in the spring caused late planting, and recent heavy and frequent rains render it impossible to keep the small plants from being smothered out by the great crop of "crab-grass;" some are contemplating plowing up and planting with corn. *Orange:* Backward, owing to the heavy frost in March, which killed much of the early planting, and to the long dry spell in April; the plant now growing finely. *Milton:* Late planted and very small; the last three weeks being very rainy, the grass beats the cotton in growing. *Heard:* Looks finely. *Wilkes:* The extremely dry April, the late frost, April 25, and heavy rains through May, place cotton at a great disadvantage; planters are already dropping a part of their crops. *Fayette:* The grass is getting the upper hand, and the prospect is that a considerable part of the crop will be lost. *Jackson:* Looks well and good stand.

In Florida three counties, Columbia, Alachua, and Levy, report each a decrease of 10 per cent. in acreage; and six an increase ranging from 10 to 25 per cent. In Madison and Clay the condition is 25 per cent., in Taylor, 30, and in Wakulla, 10 above; in Jackson, Jefferson, and Hamilton, average; in the others reported, below.

Jackson: The plant is some weeks behind in size and condition, but the weather is favorable. The caterpillar has already put in an appearance, some twenty days earlier than last year. *Wakulla:* Better stand than last year; crop promising. *Suwannee:* Bad stand, from defective seed and irregular spring; cut-worms doing great damage. *Jefferson:* The crop looks beautifully.

From Alabama, Hale reports 10 per cent., and Lauderdale 5 per cent. decrease in acreage; sixteen counties report an increase ranging from 5 to 50 per cent.; the others heard from report the same as last year; Coffee reports a condition 25 per cent., and Clarke and Geneva, 10 above average; Bibb, Winston, Saint Clair, Randolph, Dallas, Calhoun, and Jefferson, average; the remainder below, the range being from 5 to 20 per cent., Barbour, Macon, Limestone, and Conecuh standing at the latter figure.

Saint Clair: We had a severe frost on the morning of April 25, but as the ground was dry, cotton was not generally up, and hence was not much injured. *Lauderdale:* Good stands of cotton up several weeks ago, but most of it has been lost by cut-worm and flea-bug; has been replanted, and is not yet up; will be too late to make a full crop. *Blount:* Much more planted than usual. *Crenshaw:* Beginning to grow and look healthy, though smaller than at this date last year. *Limestone:* Fully two weeks behind, owing to late cold and dry weather; plants small but healthy. *Montgomery:* The appearance of the plant not so promising as usual on the 1st of June, but the warm and showery weather now prevailing will probably bring it forward rapidly. *Macon:* Seriously injured by the rains; very grassy, and we still have rains which keep it from being cleaned; the plant unusually small. *Conecuh:* Stand not so good as last year; late rains have caused the grass to grow faster than the farmers can master it. *Dallas:* Season propitious and the cultivation better than usual. *Autauga:* Very backward and much of it badly in grass, owing to too much rainy weather during May; good stands. *Morgan:* On bottom-lands much injured by cut-worms; some fields so much that they are being planted in corn. *Bullock:* Seriously injured by late frosts.

Twenty six counties report from Mississippi. Holmes returns a decrease in acreage of 5 per cent. Eleven return the same as last year, and fourteen an increase; Lee of 20 per cent., Rankin, 15 per cent., Yalabusha, Tishemingo, Sunflower, Le Flore, Coahoma, Attala, and Jefferson, 10 per cent; Bolivar reports a condition of 125; Rankin, 108; Amite, Yalabusha, Le Flore, and Granada, 100; the remainder range from 95 to 75.

Warren: Much of the cotton planted the 15th to the 20th of March, was killed by frost 15th and 16th of April; the remainder puny, and suffering from cut-worms. The later planted more promising. *Lee:* Cold and wet, and cotton not all chopped the first time yet. *Dooly:* Looking bad, in consequence of heavy hail-storms, too much rain, and too cool mornings. *Hart:* Good stand and in a healthy condition. *Grenada:* Considerably damaged by the excessive rains of late; grass, weeds, and an unhealthy condition of the plant are the consequences. *Tishemingo:* Weather now very favorable to cotton. *Neshoba:* Looking very bad; bad stands, caused by an unusually cold, wet spring. *Coahoma:* Too wet to plow all through May; cotton dying out in many places; grass abundant. *Rankin:* Spring late, but warm, and with rains so frequent as to hinder the working of the cotton-crop. *Noxubee:* Good stands, but bad condition; too much rain. *Attala:* Stand good; looks well, but the heavy rains for the last two weeks have damaged the prospect, grass and weeds having taken possession. *Madison:* Crop two weeks later than usual, but looking healthy. *Clark:* From the cold and dry weather in April, and the excessive amount of rain (9.4 inches) in May, the condition of the cotton-crop could not be other than bad. *Bolivar:* Prospect very fine. *Marion:* Crop generally rather late. *Jefferson:* Late and grassy.

From Louisiana nine parishes report no change from last year in acreage, and nine an increase. Morehouse, Washington, and Tangipahoa return an increase of 25 per cent.; East Feliciana a decrease of 10 per cent.; and Cameron of 25 per cent. Eight parishes return average condition; Assumption 5 per cent. and Winn 10, above; the others from 5 to 25, below.

Richland: Spring cold and backward; April very dry: as a consequence, cotton later than usual; stand poor in some places; prospect 10 per cent. below average. *Terre Bonne:* But little grown in this county. *Washington:* A heavy increase of acreage this year; prospect of a crop favorable. *Franklin:* In fair condition; about two weeks later than usual. *Claiborne:* Late, owing to cold spring. *West Feliciana:* The season not so favorable for cotton as the last: April cold and dry, and May too wet: the crop grassy. *Rapides:* Two weeks later than last year; covered with the apides and very grassy.

Reports have been received from thirty-nine counties in Texas. Among these the only one returning less acreage than last year is Fort Bend, which reports a decrease of 50 per cent. But it would seem that this figure refers to the area which, June 1, promised to yield a crop rather than to that planted. The report says: "The only crop we raise worthy of notice, cotton, is less promising than for many years. Twice killed by frosts, a stand was not obtained until about the 1st of May; since then rains have been so frequent that but little work could be done. The growth of grass and weeds has been rapid, and labor cannot be had. A large portion of the crop has been, and more will be, abandoned." Seven counties report the area the same as last year, and all the others an increase; Cooke, of 700 per cent.; Fort Bend, Kendall, Grayson, and Atascosa place the condition, each, at 50; Austin at 60; Tarrant, Smith, and Washington at 75; Rusk, Upshur, Hunt, Coryell, Henderson, Red River, Milan, and Hays at 80. Eleven counties report average, and only two, Livingston and Titus, above; each 110.

Blanco: Being replanted the third time, bids fair to make a good crop. *Hays:* Crop very young and late; all the early crop was destroyed by frost. *Milam:* Prospect of a good crop, though late. *Henderson:* Crop two weeks behind last year, when it was two weeks behind the year before. Now the weather is favorable, but I have never known a full crop made when so late. *Caldwell:* The decrease in condition compared with last year is owing to late frost, but the season being very favorable the crop is now doing finely and promises well. *Limestone:* Rarely a better prospect for a good crop. *Marion:* Small, but looks well. *Austin:* Far behind last year; plentiful rains, coupled with extreme warm weather, are bringing it forward, but also giving grass and weeds a vigorous start. *Dallas:* Too small yet to guess at a yield. *Coryell:* Twenty per cent. more planted this spring than ever before. The growth backward, but the stand and prospect good. *Burnet:* At least four weeks backward. *Attoscosa:* Two plantings eaten up by the grasshoppers, and now the army-worm has set in on the third. *Galveston:* All *sea-island* cotton in this county this year. *Hunt:* Continued heavy rains from the 17th to the 28th of May have injured the prospect. *Williamson:* Very promising. *Bexar:* Promising well. *Rusk:* Too wet since May 18th to plant cotton-land: the plant yellow and very grassy.

Out of twenty-six returns from Arkansas all except six show an increase in acreage, and only two a decrease. Ten indicate an average condition, and three above. The counties having the lowest condition are, Newton 50, and Bradly 70. The average for the State is 92.

Hempstead: Much difficulty in securing good stands. *Woodruff:* Many fields replanted, or plowed up and planted with corn. Cut-worm worse than ever before known. *Jackson:* Good stands; season generally favorable; farmers all seem cheerful. *Clark:* Rather late, but stand good. *Crittenden:* Owing to the cold, wet spring, we failed to get stands; had to plant seed the second time. Planted over one month later than usual. *Jefferson:* The cold spring, late frosts, and heavy rains make the condition bad. *Independence:* Cotton-planting delayed about thirty days by cold, wet weather. *Pulaski:* Cotton about fifteen days late; more or less weedy and grassy; hands working well.

Only two counties in Tennessee report a decrease in acreage: Fayette 15 per cent. and Shelby 10. Humphreys, an increase of 100 per cent.; Henry, of 50, and Obion of 30. Sumner returns a condition of 120, which is the only county above average; the remaining twenty-six from which returns have been received, range in condition from 100 down to 75.

Fayette: The crops said by old settlers to be in a worse condition than ever before. Weather has been, up to this date, remarkably wet and cool. Much cotton has been replanted. *Dyer:* Much of the crop has been plowed up and replanted as late as the 15th and 20th of May, which makes it very uncertain in this latitude. *Madison:* Nearly all of the early cotton had to be planted over again, which makes it very late; bad stands. *Cross:* Many had to plant the second time, and continuous rains since leave it in bad condition. *Hardin:* Stand bad; in some instances the crop is being plowed up and planted in corn, or replanted with cotton. Cotton-seed scarce and of an inferior quality. *Gibson:* Indifferent stand and unfavorable condition, owing to continued rains, cool weather, insects, &c. *Giles:* Fifteen to twenty days backward, and generally very much in the grass. *Leon:* Damaged by the late cold weather. *Tarrant:* For weeks past too much rain, damaging cotton to a considerable extent. *Washington:* Excessive rains in May injured cotton.

KANSAS.—*Sumner:* Many small experiments in cotton. *Reno:* Cotton is sown and looks well.

CORN.

The statistical returns, completed June 1, do not include the area and condition of corn, for the reason that it is too early; but our correspondents have frequently referred in their foot-notes to conditions which affect the prospects of that crop. The following extracts will show that the planting of corn, in most sections of the country, has been much retarded by excessively wet and cold weather, and that the pests which usually thrive in such a season, the cut-worms, have commenced extensive operations, and threaten to greatly damage the crop:

MAINE.—*Cumberland:* Not coming up well.

NEW YORK.—*Tioga:* Just planting corn. *Erie:* Not half planted.

PENNSYLVANIA.—*Washington:* Very backward. Many now replanting because of cut-worms; in some fields the dry spell killed the sprouts before they came up. *Lancaster:* Very irregular start; the most of it had to be replanted. *Lawrence:* The dry weather is injuring the crop materially. *Armstrong:* Planted the second and third time.

MARYLAND.—*Caroline:* Spring not favorable for corn. *Talbot:* Backward. *Frederick:* Coming up badly, much to be replanted, with great complaints of worms and insects. *Cecil:* Very late planted. *Queen Anne:* Only three-fourths of a crop planted; very backward, and badly injured by cut-worm.

VIRGINIA.—*Spottsylvania:* Very backward; many farmers have at least one-half to plant yet, on account of wet weather. *Pulaski:* Planting very backward on account of wet weather. *Charlotte:* Farmers not done planting on account of much rain. Many have to plow and plant over on the river and creek bottoms on account of freshets. *Lunenburg:* In consequence of much rain the corn-crop is late in planting, and much has to be replanted. *Madison:* Coming up well, but being injured by the cut-worm. *Nelson:* For several weeks the land has been kept too wet for plowing or planting, and farmers are unusually late in planting corn. *Clarke:* Very backward, and

kept down by the cut-worms, which are more numerous than ever known before. *Henrico:* Planting has "drawn its slow length along" four weeks, and is not yet over. *Highland:* Continued rains kept corn from being planted; not all done yet. *Marion:* Planting two weeks later than usual; now being worked, and looking finely.

NORTH CAROLINA.—*Lenoir:* A rain-fall, the heaviest we have had for many years, May 21, seriously damaged the crops; washed up the corn, which will have to be replanted. *Hertford:* Crop looks well. *Sampson:* Prospect never poorer. *Rowan:* Considerably washed up by the freshets. *Anson:* Benefited by the wet spring. *Green:* Very heavy frost on the 25th of April; cut the corn all down, and killed a large portion. Some plowed up and planted again; others replanted; the crop 25 per cent. below average.

SOUTH CAROLINA.—*Darlington:* Killed by frost and ice April 26; much replanted. *Orangeburgh:* Backward. *Newberry:* The continuous wet weather and the washing rains have injured stands of corn in low lands.

GEORGIA.—*Douglas:* Looking well. *Liberty:* Badly in grass and weeds, from showers day and night. *Coweta:* Looking very well. *Troup:* Looking finely; a great deal more planted than the previous year.

FLORIDA.—*Gadsden:* The farmers of this county plant a sufficiency of corn and oats to insure an ample supply for their own use and a small surplus; importations of corn are for non-producers, both white and black, the number of which is, unfortunately, large. *Wakulla:* Better stands than last year. *Suwannee:* In fine condition. *Hamilton:* Prospect finer than for a number of years. *Lery:* Silking; prospect of a better crop than for several years.

ALABAMA.—*Clarke:* Very good; a rise in the rivers has done some damage on low lands, but replanting is going on. *Franklin:* The cut-worm has been far more destructive than usual, injuring materially the stands of corn. *Lauderdale:* Looks well, though late. *Crenshaw:* Looks well. *Montgomery:* More planted than last year, and promising well. *Macon:* Seriously injured by the rains. *Dallas:* Cultivation better than usual; decrease on last year's acreage of 15 per cent.; condition, average.

MISSISSIPPI.—*Hart:* Looks well. *Tishemingo:* Very favorable for corn. *Bolivar:* A great deal more planted than last year. *Jefferson:* Doing well, but small.

LOUISIANA.—*Claiborne:* Small but healthy. *Rapides:* The recent wet weather affecting corn seriously. *Tensas:* Prospect the best for many years.

TEXAS.—*Blanco:* Being replanted the third time: bids fair to make a good crop. *Milam:* Prospect for a good crop, though late. *Limestone:* The prospect for a good crop rarely better. *Marion:* Fifteen per cent. above average. *Dallas:* Too small yet to guess at a yield. *Burnet:* At this time, when corn ought to be blooming, we are giving it the first plowing. *Fayette:* Late frosts killed the corn; yet, owing to a very propitious season since, the crop has regained what was lost, and presents an average condition. *Bandera:* Now being planted the third time. *Hunt:* Prospects injured by continued heavy rains from the 17th to the 28th of May; killed by severe frost March 26; now waist-high. *Rusk:* Hill-corn looks well; Cooly corn in silk. *Lampasas:* Our farmers planted corn three times; have now a good stand, growing finely.

ARKANSAS.—*Hempstead:* Much difficulty in securing a good stand.

TENNESSEE.—*Sumner:* Some farmers have been forced to plant their corn the third time on account of the cut-worm. *Granger:* Looks tolerably well.

KENTUCKY.—*McLean:* Late corn-planting. *Hardin:* Low, in the weeds, bad color. *Russell:* Corn-planting unfinished.

OHIO.—*Mercer:* Late corn-planting. *Miami:* Mostly up and in good condition. *Gallia:* The worst corn prospect for many years. *Defiance:* Not much planted. *Wyandot:* About half the corn planted, and much requires replanting on account of bad seed. *Champaign:* Prospect poor, much requiring to be replanted. *Adams:* Late-planted, but growing finely.

MICHIGAN.—*Ingham:* Much of the first planting of corn a failure through bad seed. *Oakland:* Early-planted corn rotted.

INDIANA.—*Decatur:* Planting delayed three weeks. *Noble:* Planting late. *Wayne:* Planting delayed. *Huntingdon:* Not much corn planted; plowing but half finished. *Miami:* Only half the corn-ground planted. *Carroll:* Planting just completed. *Marion:* Planting not yet finished. *Ripley:* Planting not completed. *Spencer:* Only half the corn planted. *Cass:* Not half the corn planted. *Warren:* Not all planted; cut-worms taking the early plantings. *Morgan:* Planting not finished. *Jasper:* But half the corn planted. *Posey:* Cut-worms very destructive to young corn. *Wells:* Planting unfinished.

ILLINOIS.—*Kankakee:* One-fourth of the corn not yet planted. *Monroe:* Planting delayed by wet. *DeKalb:* Early plantings mostly rotted: seed not generally very good. *Sangamon:* Planting late. *Jersey:* Very little planted; prospects not flattering. *Macon:* Half the corn planted. *Carroll:* Seed-corn rotting badly. *Grundy:* Not one-twentieth of the usual acreage yet planted. *McLean:* Not all planted. *Ogle:* Planting late; much replanting. *Putnam:* Much replanting. *Scott:* A third

of the corn replanted. *Stephenson:* Much replanting. *Henry:* Planting late. *Lee:* Planting not finished. *Boone:* Early-planted corn rotted; planting very backward; not finished till May 30. *Hancock:* Planting late. *Marion:* Planting a month later than last year. *Piatt:* Still planting, June 5. *Whiteside:* Planting three weeks late; promises a poor stand. *Boud:* Planting delayed by rain; cut-worm doing some damage, but the high temperature, 90°, has killed many of them.

WISCONSIN.—*Walworth:* Planting late; not promising. *Clark:* Early corn cut down by frost May 30. *Green:* Planting delayed by wet weather.

MINNESOTA.—*McLeod:* Much corn has rotted. *Noble:* Planting late. *Freeborn:* Planting delayed by rain.

IOWA.—*Poweshiek:* Planting at least two weeks late; considerable not yet planted. *Tama:* Early-planted corn rotting. *Hardin:* Just coming up; much of it replanted. *Carroll:* Early-planted corn rotting; a third not planted yet. *Louisa:* Planting fifteen days late. *Johnson:* Much corn replanted on account of poor seed and bad weather. *Delaware:* Wet weather; bad for corn, which is not all planted. *Chickasaw:* Not yet planted. *Shelby:* Twenty per cent. of the farmers have not yet planted corn, on account of rain. *Mitchell:* Backward on account of weather. *Buena Vista:* But little corn yet planted. *Audubon:* Backward and yellow. *Iowa:* Weather bad for corn. *Harrison:* Planting delayed by rains. *Lee:* Not half the corn planted. *Winneshiek:* Planting very late; considerable seed rotted in the ground on account of cold rains.

MISSOURI.—*Clinton:* Planting late; seed rotted in the ground in many cases. *Platte:* But little planted, and that in bad condition on account of the wet. *Lincoln:* Half the corn-land not yet planted. *Polk:* Late planting, but finished. *Vernon:* Much corn washed up by floods May 25. *Moniteau:* Planted in good season and coming up well. *Shelby:* Backward. *Pulaski:* Attacked by chinch-bugs. *Nodaway:* Doing well. *Adair:* Planting unfinished. *Jasper:* Corn-season backward. *Maries:* Attacked by chinches. *Ralls:* Planting delayed by heavy rains; not half planted.

KANSAS.—*Neosho:* Looks well; mostly planted before the wet weather set in. *Labette:* Poor prospect. *Woodson:* Many acres of corn flooded by the Neosho. *Linn:* Planting late. *Marion:* Many acres of early corn plowed up and replanted on account of weeds. *Coffey:* Crops damaged seriously by rain. *Shawnee:* Planting delayed by wet. *Doniphan:* Doing well.

NEBRASKA.—*Johnson:* Will be put in late. *Gage:* Too wet to get in corn. *Cass:* But half planted. *Merrick:* Planting unfinished. *Washington:* Not all planted. *Cuming:* Will probably be a failure on account of heavy rain-fall.

OATS.

An increased acreage of oats, and a condition above average is reported in the majority of the States. The greatest enlargement of acreage is in Louisiana, 31 per cent. above the previous year. The greatest decrease is in Ohio, 27 per cent. The other States showing a decreased acreage are Rhode Island, 7 per cent.; New Jersey, 8 per cent.; Pennsylvania, 2 per cent.; Delaware, 8 per cent.; Maryland, 1 per cent.; Tennessee, 1 per cent.; Michigan, 5 per cent.; Indiana, 16 per cent.; Illinois, 13 per cent.; New York and Massachusetts are full average while the remainder of the States range from 1 to 31 per cent. above average. The condition of the crop is average or above in all the States except Vermont, Massachusetts, Rhode Island, New York, New Jersey, Pennsylvania, Texas, Tennessee, Ohio, Michigan, Indiana, Illinois, and California. The maximum is found in Virginia, 113; the minimum in California, 83.

MASSACHUSETTS.—*Middlesex:* About average. *Norfolk:* Have been more extensively sown and look well. In this county great quantities are *cut green* for fodder.

NEW YORK.—*Genesee:* Very late in starting; the ground in bad condition, being hard and dry.

NEW JERSEY.—*Hunterdon:* Many have been unable to put in more than a small crop of oats in consequence of the late and wet spring.

PENNSYLVANIA.—*Clinton:* Very backward, owing to the wet and late spring. *Berks:* Look remarkably well. *Bucks:* From two to three weeks late on account of wet weather. *Lawrence:* The dry weather is materially injuring the crop. *Cambria:* Very backward on account of the cold, wet spring. *Armstrong:* At a stand for want of rain.

MARYLAND.—*Caroline:* German yellow oats, from the Department, very promising.

VIRGINIA.—*Botetourt:* Very promising. *Spottsylvania:* Crop not large, but very promising. *Lunenburg:* The weather in May favorable to oats. *Warren:* Were looking remarkably well May 1, but since the dry weather have been attacked by a small fly which has destroyed from 10 to 15 per cent. *Henrico:* Have never seen such crops of oats, both winter and spring, as are now growing. *Nansemond:* Drought in April cut short the oat crop. *New Kent:* Spring oats in better condition than I have ever seen them. *Prince George:* Very good. *Washington:* Good, *Chesterfield:* Never looked better.

NORTH CAROLINA.—*Hertford:* Bid fair for a good crop. *Cumberland:* Crop promising. *Anson:* Benefited by the wet spring. *Greene:* Injured by heavy rains in May. *Polk:* Looking better than last year.

SOUTH CAROLINA.—*York:* As the cultivation of corn on the uplands diminishes, reliance upon the oat-crop is gradually increased. It is rarely a full one here: rust, blight, and the dry weather in May and June generally cut it off.

GEORGIA.—*Muscogee:* Fall oats mostly killed by freezes during the winter. Considerable quantities sowed this spring, but do not look well. *Calhoun:* Winter oat crop very good; now ready for harvesting. *Madison:* Fall oats winter-killed. Spring oats better than usual. *Murray:* The season very favorable for oats.

FLORIDA.—*Jackson:* Crop has done well. *Levy:* The crop is being gathered; very good.

ALABAMA.—*Lauderdale:* The winter held on so long that our people thought it too late to make good oats: hence the acreage is much less than usual. *Montgomery:* Acreage more extensive than usual; healthy and promising. *Conecuh:* Better than last year, owing to late rains.

MISSISSIPPI.—*Rankin:* Now harvesting; none sown but red.

TEXAS.—*Palo Pinto:* Almost totally destroyed by grasshoppers. *Coryell:* Prospect good, but the harvest will be at least one month later than usual. We have a variety called red oats, which last year made 60 to 70 bushels per acre. *Burnet:* Injured by frosts and grasshoppers. *Williamson:* Harvesting: promise better than average. *Gilmer:* Injured by drought.

TENNESSEE.—*Loudon:* Never looked better. *Gibson:* Season has been favorable for oats. *Grainger:* Good.

WEST VIRGINIA.—*Mercer:* Shortened by cold, backward spring. *Nicholas:* Oats very good. *Monroe:* Oats look well. *Pocahontas:* Fair condition.

KENTUCKY.—*Hardin:* Oats low, but of good color. *Lincoln:* Promising. *Greaves:* Good.

OHIO.—*Athens:* Oats promising. *Warren:* Promising. *Sandusky:* Oats promise a poor crop.

MICHIGAN.—*Clinton:* Oats sown very late.

INDIANA.—*Noble:* Acreage of oats cut down by wet weather. *Dearborn:* Season too wet to sow oats to any extent.

ILLINOIS.—*Williamson:* Look well. *Macon:* Yellow from rain and cold. *Ogle:* Late planted, and somewhat under average. *Henry:* Fine prospect and increased acreage.

MISSOURI.—*Polk:* Oats look poorly, probably on account of backward season, but may come out yet. *Crawford:* Look finely. *Caldwell:* Look very well. *Franklin:* Chinch-bug in oats. *Pulaski:* Looking well. *Nodaway:* Fine. *Adair:* Very good. *Maries:* Chinch-bugs in oats.

MINNESOTA.—*Faribault:* Rain has prevented the sowing of many oat-fields on the flat prairies.

RYE.

The acreage of winter-rye ranges from 83 per cent. of last year's acreage in Rhode Island, to 124 per cent. in Kansas; twenty-four States report a decreased and ten an increased acreage. The condition is above average in New England, Pennsylvania, Maryland, Florida, Alabama, Arkansas, Minnesota, Missouri, Kansas, Nebraska, and California; Mississippi and Ohio are full average; the remaining States are below. The maximum, 110, is found in California; the minimum, 83, is in Illinois. Oregon makes no report. Spring-rye is reported in Pennsylvania, Georgia, Texas, Kentucky, Ohio, Michigan, Indiana, Missouri, Kansas, and California. The acreage compared with last year ranges from 81 in Kentucky to 108 in California; the condition, from 79 in Indiana to 108 in Kansas.

MASSACHUSETTS.—*Middlesex:* Winter-rye looking finely.

CONNECTICUT.—*Hartford:* Came out good in spring, having been covered with snow all winter.

NEW YORK.—*Schoharie:* Winter-rye good.
PENNSYLVANIA.—*Montgomery:* Very promising. *Berks:* Looks remarkably well. *Northumberland:* Looks unusually fine.
MARYLAND.—*Howard:* Promises at least an average crop.
VIRGINIA.—*Montgomery:* Badly winter-killed, but the crop remaining improves beyond expectation. *Henrico:* Very fine; probably the heaviest crop ever grown in the county. *Washington:* Badly winter-killed. *Highland:* Greatly injured by freezing.
NORTH CAROLINA.—*Cherokee:* Froze last winter worse than heretofore. *Ashe:* Badly injured by freezing. *Greene:* Injured by heavy rains in May.
GEORGIA.—*Marion:* Winter-rye received from the Department not worth anything; lies on the ground all winter and spring, when native rye is from 4 to 5 feet high. *Murray:* Badly winter-killed; quality will be good.
LOUISIANA.—*Bossier:* The rye sent me by the Department last fall is the finest I have ever seen.
TEXAS.—*Burnet:* Injured by frosts and grasshoppers. *Medina:* Winter-rye entirely destroyed by grasshoppers; not a bushel will be raised in the county. *Williamson:* Promises to be better than average.
TENNESSEE.—*Jefferson:* Thin and short stems; injured by freezing and wet weather.
WEST VIRGINIA.—*Mercer:* Winter-rye badly frozen. *Nicholas:* Rye about average; looks well. *Pocahontas:* Rye frozen out.
KENTUCKY.—*Lincoln:* Rye promising. *Greaves:* Good.
IOWA.—*Clinton:* Rye killed. *Muscatine:* Badly winter-killed. *Ringgold:* Rye badly winter-killed.

BARLEY.

Winter-barley is grown in Pennsylvania, Georgia, Texas, Kentucky, Ohio, Michigan, Indiana, Missouri, Kansas, and California; its acreage compared with last year's varies from 80 per cent. in Indiana to 110 per cent. in Texas; its condition from 65 per cent. in Kentucky to 108 per cent. in Kansas. Spring barley is reported in the New England, Middle, and Northwestern States, none growing south of the Ohio River. The maximum acreage, 128, is in Oregon; the minimum, 83, is in Indiana. The maximum of condition, 114, is in Missouri; the minimum, 85, is in California.

MASSACHUSETTS.—*Middlesex:* About average.
NEW YORK.—*Genesee:* Very late in starting; ground in bad condition, hard and dry.
KENTUCKY.—*Fayette:* Barley almost a failure.

GRASS AND PASTURES.

Throughout the New England States the grass in both pastures and fields, though late, appears to be "well set," and affords a favorable prospect for both grazing and hay. In Vermont the average condition of both clover and pastures is 99; of pastures in Massachusetts, 100. With these exceptions the condition of both was above annual average about the 1st of June. There is an increase in the acreage of clover, in all except Rhode Island, in which it is the same as last year. In New Jersey nearly all clover sown a year ago is reported as killed out by the drought last summer; that sown this spring is starting well. The report for Montgomery County, Pennsylvania—"grass well set, thick and thriving, though late for the season"—is a specimen for that State and Maryland, though in the latter the condition is somewhat reduced from the effects of drought last summer. In Georgia, Pike County returns an increase of acreage in clover of 400 per cent., and in Mississippi, Wilkinson returns an increase of 700 per cent. All the returns indicate an increase of area over last year of something over 2 per cent., and a promising, though backward condition.

MAINE.—*York:* Grass is well set. *Androscoggin:* Clover good; none last year. *Sagadahoc:* Grass is doing very well.

NEW HAMPSHIRE.—*Cheshire:* Everything very late except grass; pastures look very fine.

MASSACHUSETTS.—*Middlesex:* Grass winter-killed in places; clover badly, but hay exceedingly promising. *Plymouth:* Grass thick-set, but suffering for want of rain.

NEW YORK.—*Columbia:* Clover very poor; old pastures good. *Wyoming:* Clover coming on finely. *Madison:* Grass suffering from dry weather. *Lewis:* Grass looks finely. *Erie:* Pastures fed too close through May for their good.

NEW JERSEY.—*Sussex:* The clover sown last year will not make three-fourths of a crop, so much was lost from various causes; that sown this spring is doing well. *Monmouth:* Owing to the dry weather last summer we have but little clover. *Camden:* Will be very little clover-hay, owing to the poor stand last spring; the crop of timothy will be much better; pastures very short for the season. *Burlington:* Many fields have no clover; all killed last summer; the spring very favorable for the growth of young clover just starting in the wheat-fields; timothy better than clover, but does not promise an average crop. *Warren:* Clover is short; timothy promises a full crop.

PENNSYLVANIA.—*Clinton:* Very promising. *Union:* The cold, wet spring kept the meadow grass back, but it is now warm, and we expect a good hay crop. *Northumberland:* Clover and timothy look unusually fine. *Lycoming:* Clover and pastures looking well. *Greene:* Spring favorable on grass.

MARYLAND.—*Howard:* Frequent rains have given clover and grass a fine appearance. *Baltimore:* Pastures very abundant; grasses for hay in fine condition. *Cecil:* Very fine growth of clover and grass, but generally thin on the ground, owing to drought last summer. *Queen Anne:* Clover very backward and thin on land; pastures backward.

VIRGINIA.—*Botetourt:* Grass very promising. *Spottsylvania:* The crop of clover the best for many years. *Fluvanna:* The stand of clover is bad on account of last year's drought. *Hanover:* The cultivation of pasture and grass-bearing lands is a necessity in the eastern part of the State. We shall never recuperate the endless amount of worn-out lands until we understand the business of stock-raising. Orchard grass, timothy, and clover, are all susceptible of high cultivation in almost any part of the State. *Lunenburg:* Weather in May favorable for clover. *Montgomery:* The hay crop promises an abundant yield, and pastures are fine and rich. Orchard grass is becoming very popular. *Culpeper:* The dry weather of 1872 destroyed the growing clover, hence the small acreage of 1873. *Henrico:* Have never seen such crops of clover as are now growing. *Nansemond:* Drought in April cut short the clover crop. *Prince George:* Clover and hay crops very good. *Washington:* One-half the clover pulled out of the ground by freezes; looks healthy now. Pasturage very late, but growing well now. *Chesterfield:* Clover yielding finely.

NORTH CAROLINA.—*Martin:* Our principal pastures are on the low grounds of the Roanoke River, which has overflowed its banks this spring, and very materially injured them.

SOUTH CAROLINA.—*Greenville:* Red clover-seed sown last October came up and looked well, but it has disappeared. *York:* Spring pastnrages are in fine condition.

GEORGIA.—*Troup:* Some clover lots sown the past spring promise well. The Italian rye grass sent by the Department is doing finely. *Jackson:* Clover will not do well unless on rich land and limed.

LOUISIANA.—*Franklin:* Our spring pasturage is of the native grasses, and is finer than for some years past.

TEXAS.—*Medina:* Pasturage suffered from grasshoppers.

ARKANSAS.—*Arkansas:* Pastures on the prairie excellent.

TENNESSEE.—*Loudon:* Our clover has been almost a failnre in sowing for the last two years. *Bedford:* The freeze in the winter, and the army worm in the spring, destroyed nearly all the clover crop. *Gibson:* The season has been favorable to grass and clover. *Grainger:* Meadows rank with chess, here called "cheat." The cold snap, March 3d, injured the clover and meadows.

WEST VIRGINIA.—*Mercer:* Clover and spring pasture short, in consequence of cold, backward spring. *Pleasant:* Clover sowed last winter purer than previous crops. *Nicholas:* Clover fine. *Pendleton:* Fine weather is bringing out grass crops. *Putnam:* Clover thinned out by severe winter. *Harrison:* Season favorable to meadows, pasture backward, but improved by late rains, and better than for two or three years. *Monroe:* Clover and pasture fine.

KENTUCKY.—*Shelby:* Clover badly frozen out. *Taylor:* Clover damaged by freezing 50 per cent. *Fayette:* Clover promising. *Lincoln:* Clover badly winter-killed. *Laurie:* Clover nearly frozen out. *Edmonson:* Clover badly winter-killed.

OHIO.—*Warren:* Grass crops promising.

MICHIGAN.—*Washtenaw:* Hay prospects poor.

INDIANA.—*Perry:* "A strange weed or grass has made its appearance in our meadows, old and young, seriously threatening to destroy them. Hoeing has not proved successful. It resembles sour-sorrel, the German *sauer-grass*. It sprouts from the roots which are very long and tough. It is crowned with a brownish top of seeds or bloom

Its first appearance was remarked some two years ago. In spots it has entirely killed out the grass." *Noble:* Pastures good. *Huntington:* Pastures very short. *Cass:* Clover sown this spring has taken finely.

ILLINOIS.—*Pope:* Clover badly frozen out. *Winnebago:* Pasture short; half the clover winter-killed. *Williamson:* Army-worm taking the meadows. *Randolph:* Badly injured by drought last year. *Perry:* Army-worms in meadows. *Fulton:* Two-year old clover badly winter-killed; will bring but a half crop. *Montgomery:* Pastures and meadows fine. *Boone:* Clover badly winter-killed.

WISCONSIN.—*Jefferson:* Clover badly winter-killed. *Walworth:* Grass-crops backward, but healthy and green. *Saint Croix:* Clover badly winter-killed. *Dunn:* Grass prospects improving. *Green:* Clover largely winter-killed. *Monroe:* Clover badly winter-killed, but what was left is fine. *Vernon:* Two-year old clover winter-killed; younger doing finely.

MINNESOTA.—*Dodge:* Clover badly frozen out. *Steele:* May favorable for grass. *Winona:* Pasturage late. *Goodhue:* Red clover extensively winter-killed; other grasses much injured.

IOWA.—*Muscatine:* Pasture injured by grub-worms last year. *Louisa:* Clover badly frozen out. *Floyd:* Pasture good but unusually late. *Winneshiek:* Old clover-meadows and pastures badly frozen out.

MISSOURI.—*Holt:* No tame grasses raised. *Caldwell:* Old clover-roots badly killed. *Greene:* Late fine weather greatly improved grass-crops. *Shelby:* Grass-crops fine. *Pulaski:* Increased attention to clovering. *Adair:* Clover and pastures look well. *Ralls:* Grasses look well.

CALIFORNIA. *Kern:* Much attention to Alfalfa; largely grown on irrigated land. *Butte:* Alfalfa the only clover grown; dry spring has cut down pasture. *Stanislaus:* Hay will yield from one-fourth to two and a half tons per acre.

COLORADO.—*Conejos:* Very little grass for stock.

UTAH.—*Salt Lake:* Grass crops unusually promising. *San Pete:* Pasturage very good. *Wahsatch:* Rains very genial to spring pasture.

IDAHO.—*Nez Percé:* Late rains have made fine pastures.

FRUIT.

Almost every variety of fruit appears to have been more or less injured by the unusual severity of the winter, and the late spring frosts The damage to the peach-crop from these causes has been universal, and in most sections very serious, not only destroying the crop for this season, but the tree itself. Specific statements will be found in the extracts below. In the New England and Middle States the average amount of apple-bloom falls about 24 per cent. below medium. The average per cent. for the remaining States is considerably higher, though less than medium. The only States in which the average amount is above medium or 100 are: Virginia, 102; Louisiana, 101; Michigan, 106; Wisconsin, 104; Iowa, 110; Kansas, 122; Nebraska, 128; and Oregon, 163. In Delaware the return from Sussex places the amount of peach-bloom at 200; New Castle, 25; and Kent, 100. The average of the counties reporting from Alabama and Mississippi is 100; from Tennessee, 101. But in all the other States it is below 100, and in the principal peach-growing States much below. In New Jersey, 70, and average condition, 81.

MAINE.—*York:* The apple-blossom is much better than usual for the odd year. *Somerset:* Apple-trees just in bloom. *Androscoggin:* Apples, pears, and peaches not yet in blossom to any amount. *Piscataquis:* Apples not in bloom yet.

NEW HAMPSHIRE.—*Hillsborough:* The fruit-trees, not yet in bloom, look well. *Cheshire:* Apple-trees have but commenced blooming. The extremely cold winter paralyzed the fruit-trees, destroying a great number of them, and also of grape-vines not protected.

MASSACHUSETTS.—*Middlesex:* Very full blossom of pears. *Berkshire:* Pears in full bloom; apples just showing blossom. *Norfolk:* Apples low; peaches lower; many of the peach-trees are winter-killed; pears look well.

CONNECTICUT.—*Hartford:* Peach-trees much injured by the cold winter; fruit-trees blossomed two weeks later than usual.

NEW YORK.—*Greene:* The winter was so severe that our peach-buds are all killed, and some of the trees. *Rensselaer:* The first apple-blossoms May 24; fifteen days later than usual. *Cattaraugus:* Apple-trees just in bloom. *Steuben:* Fine show of fruit of all kinds.

Washington: Apple-trees just in full bloom. *Wyoming:* Fruit-trees late, but full of blossoms. *Jefferson:* The prospect for fruit very good. *Niagara:* Peaches an entire failure. *Erie:* Plum-trees in bloom the 25th; cherry-trees the 27th; apple-trees half out on the 30th.

PENNSYLVANIA.—*Luzerne:* Peach-trees nearly all killed by the winter; also grapes; pears good as usual. *Union:* The peach-trees are all dead, the winter being too cold. *Clearfield:* Fruit-trees just in blossom. *Adams:* The extreme cold of last winter proved very destructive to buds, in many instances killing even the trees. There will probably not be over 100 bushels of peaches in the county. *Cumberland:* Peaches have all been frozen. *Berks:* Fruit of all kinds looks rather discouraging. Peach-trees and grape-vines badly frozen—worse than I ever knew them. *Northumberland:* The uncommonly severe frosts of last winter killed most of our grape-vines and quince-trees, and so greatly injured our cherry, peach, and plum trees, that they will bear little, if any, fruit this year. My Catawba and Isabella grape-vines froze down to the ground, and even my Clinton vines were considerably injured. Apples and pears promise a fair crop. *Lancaster:* Fruit considerably damaged by the severe winter. *Greene:* All the peaches on low ground winter-killed.

NEW JERSEY.—*Sussex:* Apples will not make more than half a crop, judging from the quantity of blossoms, but the condition is good. No peach-blossoms; suffered from the severe winter. *Monmouth:* Peaches have been generally killed. *Camden:* Peach-bloom killed last winter; also the twigs and young limbs of last year's growth. *Burlington:* No fruit worth mentioning in my peach orchard and those in the vicinity. Pears very promising. Many apple-trees had no bloom. *Mercer:* The bloom has just fallen; fruit promises well. *Hudson:* Orchards exhausted by the large yield last year, but where manure was profusely used a fair crop is promised. Pears blossomed well, but late frosts caused the fruit to drop off.

DELAWARE.—*Sussex:* Area in strawberries double that of last year; flattering prospect for a large crop.

MARYLAND.—*Howard:* No peaches on low lands. *Caroline:* A large crop of strawberries. *Baltimore:* Peaches are winter-killed; other fruit promising. *Queen Anne:* Apples, peaches, and pears much injured by late frosts.

VIRGINIA.—*Powhatan:* Crop promises to be enormous. *Northumberland:* On the night of April 25 ice made an eighth of an inch thick, and did considerable damage to fruit. *Spottsylvania:* Large apple-crop; largest peach-crop for many years. *Floyd:* The peach-crop, pears, and early cherries, have been greatly injured by late frosts. *Greenville:* Promise of abundant pears and peaches; apples are dropping off sadly. *King William:* On the 4th of April we had a very severe freeze, which killed the apples, then in bloom; but the peaches were too far advanced to be much hurt. *Warren:* Peaches nearly all destroyed by frost, except those on high land with northern exposure. *Prince George:* The severe frost April 26 seriously injured the fruit; remote from the water-courses there will be scarcely any. *Mecklenburg:* Fruit crop very promising. *Alexandria:* Peach-buds generally injured by the severity of the winter. *Buckingham:* Fruit-crop badly injured by frost April 20. *Chesterfield:* A large portion of the fruit has dropped off the trees, owing to the severe freeze on the 26th of April. *Lancaster:* All kinds give promise of an abundant crop.

NORTH CAROLINA.—*Gates:* The apple and pear crop almost an entire failure. *Chowan:* Scarcely any apples or pears. *Cherokee:* Apple and peach crop nearly destroyed by the frost late in April. *Davie:* The heavy frost April 26 killed fruit. *Haywood:* Not as full bloom of fruit-trees as common; a frost late in April killed at least three-fourths of the crop. *Cumberland:* Fruit of all kinds killed by freeze April 26. *Franklin:* Damaged by hail-storms. *Moore:* Fruit nearly all killed by late frosts. *Rowan:* Fruit-crop almost entirely destroyed by frost in April. *Iredell:* Fruit of all kinds killed by frosts. *Ashe:* Peaches killed in the bud. *Anson:* A killing frost about the last of April damaged the fruit to a great extent. *Union:* Dry weather, and heavy frost the last of April, killed nearly all the fruit. *Polk:* The fruit-crop will be almost a failure on account of heavy frosts. *Burke:* Late frosts have killed, in many places, nearly all the fruit-crop. *Montgomery:* Nearly all fruits killed by the frost of April 25. *Stanly:* The hard frost in April well-nigh annihilated the crop of fruit.

SOUTH CAROLINA.—*Darlington:* Bunch-grapes entirely destroyed by severe frost and ice, April 26. Peaches severely injured; also pears and apples. *Fairfield:* Fruit all killed by frost April 26. *Greenville:* All the young fruits appear to be dead; the trees wear a burnt aspect. *York:* Fruit of all kinds a complete failure, being killed by the frosts from the 15th to the 25th of April. *Lexington:* The entire crop of apples, pears, peaches, and grapes nearly destroyed by a heavy frost April 25. *Marion:* Fruit destroyed by frost April 26.

GEORGIA.—*Madison:* A failure owing to the killing frost on the 26th of April. *Irwinton:* Peaches and apples destroyed in a great degree by cold, high winds. *Troup:* An abundance of peaches and other small fruits. *Jackson:* Apples and peaches killed by frosts.

ALABAMA.—*Winston:* A frost, April 13, injured fruit. *Saint Clair:* In some neigh-

borhoods all the fruit was killed by a severe frost on the 25th of April, while in others it was not injured. *Blount:* Peaches killed in many places by frost on the 25th of April. *Montgomery:* Fruit prospect very flattering. Strawberries unusually abundant since the middle of April; remarkably large, especially the Boyden No. 3; the fruit a month later than in 1871, on account of the intensely cold winter and backward spring. Raspberries fine, especially our native black-caps. Our native red and yellow plums now ripe and abundant. Apples abundant; the early varieties now ripening; crop more promising than for several years. Peach-crop equal to that of 1871, though later. Pears healthy and promising. Blackberries very healthy; the Kittatinnies and Rochells full of large, fine fruit. Grapes doing well; the six varieties sent me by the Department all living and doing well. *Calhoun:* Fruit nearly all killed by frost. *Autauga:* Apples nearly all dropped off. *Coffee:* Late frosts killed most of the fruit.

MISSISSIPPI.—*Tishomingo:* Apples and peaches fallen off.

LOUISIANA.—*Morehouse:* A severe freeze on the 28th of March reduced our peach-crop over one-half. The grapes promise fair; vines fuller with fruit than ever before. The Catawba and the Isabella bloomed on the 26th of April—ten days earlier than usual. *Terrebonne:* Some varieties of apples and pears do well here. They are now attracting much attention, and many young trees have been set out this year. The orange, fig, plum, peach, grape, banana, and quince are produced abundantly. The pine-apple, with a very little protection for a few days in winter, does well with us. *Washington:* Fruit doing well. *Franklin:* The most of the peach-blooms, more plentiful than for several seasons, were killed by the freeze on the 25th March; what remain look very thrifty. *Claiborne:* Fruit of all kinds badly injured by frosts. *Caddo:* Fruit, which bloomed finely, was injured by late frosts.

TEXAS.—*Bosque:* All killed. *Hays:* Peach-crop entirely destroyed by frost. *Marion:* Fruits and berries 25 per cent. above average. *Titus:* The various varieties of fruit bloomed finely, but about the time of the dropping of the blossom the freeze came, leaving not more than 50 per cent. of late apples, 25 per cent. of peaches, and 10 per cent. of pears. All varieties of small fruits that were in bloom shared the same fate. *San Saba:* The severe frost on the 26th of March destroyed all the fruit. *Coryell:* Will not be a bushel of peaches raised in the county. *Fayette:* Late frosts killed a portion of the peach-crop; what remain are larger than common. *Medina:* Peach-crop suffered from grasshoppers. *Galveston:* Fruit generally killed by frost. *Bexar:* Severe frost March 26 damaged fruit. *Fannin:* Fruit injured in some localities by recent hail-storms. *Gilmer:* Peach-crop nearly lost by frost; apples and pears much damaged. *Leon:* Fruit-crop a total failure owing to the late cold weather.

ARKANSAS.—*Clark:* Peaches injured by frost; apples full and promising; pears very full. About 30 per cent. of trees died from some disease. *Sebastian:* The unusually cold winter killed all the peaches and many of the peach-trees; maybe half a crop of apples and pears. *Benton:* A heavy snow, April 7, destroyed nearly the entire crop of fruit; peaches all killed in the winter. *Jefferson:* Late frosts have damaged all fruit beyond recovery. *Washington:* Apple and peach crops nearly a failure, owing to the extreme cold winter and late frosts.

TENNESSEE.—*Anderson:* Killed by late frost. *Decatur:* The frost injured the apple and peach crop after the blossoms had mostly dropped off. *Madison:* The caterpillars have destroyed the apples, and are now doing great harm to the timber by taking off all the leaves. *Rhea:* Heavy frost on the 18th of April killed nearly all the fruit. *Smith:* Of apples, peaches, and pears there is not half a crop left. The bloom was fine and the prospect excellent till the 26th of April, when a severe frost destroyed it. *Sevier:* A frost with ice on the 26th of April killed about all the fruit in this county. *Bedford:* Apples, peaches, and pears killed by the frost in April. *Jefferson:* Apples, peaches, and pears destroyed in great measure by cold snap in April. *Montgomery:* Frost killed the fruit. *Meigs:* A late frost killed all our fruit except in a few orchards in favorable locations. *Marion:* Fruit all killed by frost. *Humphreys:* Fruit-crop almost entirely killed by frosts. *Gibson:* The fruit prospect was flattering, but unfortunately, through the ravages of the caterpillar the trees have been denuded. *Giles:* Fruit-crop will be almost a failure; killed by frost, April 26. *Grainger:* Few peaches on high land; all killed on low land. Scarcely any apples. *Morgan:* A frost, April 21, destroyed most of the fruit. *Henry:* Frost in May killed a large portion of apples and peaches, and damaged many small fruits. *Hancock:* Apple-bloom very light; peach-bloom abundant, but nearly all killed by frosts.

WEST VIRGINIA.—Apples, peaches, and pears damaged by frost; peaches largely killed in the bud. *Randolph:* Apples falling from effects of frost. *Nicholas:* Fruit-bloom copious, but the crop will be small. *Kanawha:* Unusually copious apple-bloom, but the fruit is cut short by frost. Peach-bloom mostly confined to the Kanawha bottoms. *Braxton:* Peach-bloom only on the higher table-lands; many trees killed; the same true, to some extent, of apples. Borers killed some. *Pendleton:* Fruit considerably destroyed by cold weather; peaches ceasing to be a successful crop. *Mineral:* Apple-crop a failure and peaches all winter-killed except on high lands. *Tyler:* Fruit

generally and severely injured by frost. *Monroe:* Apples slightly injured by frost; peaches partly winter-killed.

KENTUCKY.—*McLean:* Fruit greatly damaged by frost. *Taylor:* Frost spared the fruit of only a few sheltered localities. *Laurel:* Apples, peaches, and pears largely destroyed after blooming. *Spencer:* Fruit prospects injured by frost. *Livingston:* Pear-blossoms dropped without maturing; peach-bloom copious, but largely killed in the low grounds by March frosts. *Grayson:* All the peaches and pears, and three-fourths of the apples, frost-killed. *Larue:* Peaches killed, except in the hill country, by April frost. *Nicholas:* Peaches mostly fallen from the trees; leaves crisped; crops will be light. *Breckinridge:* Peaches killed in all the valleys and low grounds by the frosts of April 26. *Russell:* Fruit almost an entire failure; found four apples on seventy-five trees; scarcely any peaches or pears.

OHIO.—*Logan:* Peach-bloom nearly all killed. *Vinton:* Fruit prospects small; probably apples enough for home-consumption. *Franklin:* Apples attacked by a black or dark-brown worm 1¾ inches long. *Geauga:* Peach-trees largely winter-killed; scarce a bushel of the fruit will be raised; only the hardier varieties of apples escaped. *Defiance:* Grape-vines generally winter-killed, and had again sprouted from the roots; the sprouts were killed by the heavy frosts of May 31. *Hardin:* Copious pear-bloom, but little or no fruitage. *Jefferson:* Peaches nearly a failure; not one-tenth of an average. *Warren:* Few apples; no peaches; a few pears and cherries. *Sandusky:* Peach-trees all winter-killed; pears winter-killed, with many trees.

MICHIGAN.—Apples and pears in full bloom; peach-trees nearly all dead; fruit of all sorts much injured. *Lapeer:* Peaches nearly all winter-killed; few blossoms. *Monroe:* Peach-trees nearly all killed; have not seen a peach-blossom. *Newaygo:* Fruit-trees generally injured by winter; peach-trees nearly all killed; some other fruits promise a fair crop. *Calhoun:* Peach-trees nearly all killed. *Cass:* Peach-trees generally killed. *Barry:* Peach-trees mostly killed. *Mecosta:* Peach-trees frozen down to the ground; pear-trees greatly injured. *Mason:* Very little peach-bloom. *Clinton:* Apples barely out of blossom.

INDIANA.—*Switzerland:* Peaches on bottom-lands killed by late frosts. *Ripley:* Apples and pears not more than a fourth of a crop; few peaches; many peach-trees winter-killed. *Hendricks:* Quite a number of trees in young orchards winter-killed; in an orchard of 500 white pippins, one-third will die. *Kosciusko:* Hard winter killed nearly all the peach and many of the cherry trees. *Morgan:* Peach-trees killed or badly injured. *Union:* Blight cut down the pear crop one-fourth; apple-trees injured by caterpillars, and forest-trees by measuring-worms. *Brown:* Peach-trees all killed except on the highest table-lands. *Newton:* Grape-vines, and peach and pear-trees, damaged by the very cold winter.

ILLINOIS.—*Champaign:* Nearly all the peach-trees and many apple-trees killed. *Clinton:* Peach-trees all killed; apricots and cherries killed, as also half the pears; many apple-trees also killed. *Marion:* Many fruit-trees and most of the fruit-killed; gooseberries and currants will yield a small crop. *Williamson:* Early apples frost killed in March and April. *Macon:* All the old peach-trees killed and 20 per cent. of the pears; grapes injured; Catawbas stood the winter the best of all the varieties. *Edwards:* Tent-caterpillars destroying apple-trees and forest-trees; peach-trees largely winter-killed. *Randolph:* Eighty per cent. of peach-trees winter-killed. *Wayne:* Poorest show for fruit ever known; ruined by cold and caterpillars. *Edgar:* Peach-trees winter-killed; many apple and pear trees injured; nearly all grape-vines, except Concords and Clintons, were killed. *Moultrie:* Peach-trees killed. *Putnam:* Peach-trees all winter-killed. *Henry:* Apple prospect poor. *Fulton:* Apple-trees badly injured; one-sixth will die; peach-trees all dead; pears nearly all killed; Flemish Beauty stood the winter best. *Macon:* Peaches all winter-killed. *McHenry:* Grapes and early strawberries slightly injured by frost. *Piatt:* Old peach and pear trees mostly killed. *Montgomery:* Peach-trees mostly killed.

WISCONSIN.—*Richland:* Apple-trees largely winter-killed. *Clark:* Frost of May 30 destroyed all early varieties of fruit with most of the apple and pear bloom. *Douglas:* Many fruit-trees set out last year have been destroyed by mice. *Saint Croix:* Apples blooming; some early buds and leaves killed by frost, May 11. *Dunn:* Frosts injured fruit. *Vernon:* Apple-bloom abundant, but deceptive; orchards of Western Wisconsin greatly damaged last winter.

MINNESOTA.—*Dodge:* Many varieties of apples winter-killed. *Steele:* Fruit somewhat affected by the severity of the winter; transplanted trees never looked better. *McDonald:* Peaches a failure; no blooms. *Hennepin:* Copious early bloom not followed by fruitage; trees seemingly injured. *Goodhue:* Apples-trees greatly injured.

IOWA.—*Tama:* One-fourth of pear-trees injured by winter. *Decatur:* Orchards mostly young; bloom very great; thousands of trees just coming into bearing. *Louisa:* Fruit-bloom abundant, but the fruitage probably ruined by cold rains and northeast winds. *Marion:* Peach-trees mostly winter-killed. *Grundy:* Nearly all the pear-trees killed with blight. *Des Moines:* Apple-bloom abundant, but the trees were so badly injured that many will die, and the fruitage small. *Harrison:* Peach-trees liable to winter-

kill; many thousands of young apple-trees planted this spring; grape prospect good. *Winneshiek:* Nearly all the pear-trees, many apple-trees and three-fourths of the grape-vines winter-killed.

MISSOURI.—*Crawford:* Peaches all killed by freezing, with many of the trees; apples not hurt. *Platte:* Peach-crop will be a complete failure; most of the trees winter-killed. *Holt:* Apple-bloom very copious; peaches winter-killed; pears look well, but this fruit is unreliable through blight. *Ozark:* Peach-trees mostly winter-killed. *Saint Genevieve:* All trees that bore peaches last year have been winter-killed. *Cass:* No peach-bloom. *Vernon:* Hail, on the night of May 26, beat the fruit from the trees to a great extent. *Maniteau:* Old peach-trees mostly winter-killed; young trees seriously injured. *De Kalb:* Peaches a failure. *Shelly:* Peaches all killed. *Pulaski:* Many old peach-orchards killed by severe weather; grape-vines starting vigorously. *Daviess:* Peach-buds all winter-killed, and many peach-trees badly injured. *Jasper:* Early apple-bloom killed; no peach-crop; trees badly injured by winter. *Taney:* Peach-crop winter-killed. *Newton:* Peaches all killed with many of the trees. *Jackson:* Apple-bloom very copious, but within a few days the blight has reduced the yield one-half.

KANSAS.—*Montgomery:* Fruit largely winter-killed. *Washington:* Peaches promise well in all trees three years old and upward; small fruits, good promise. *Franklin:* Peach-bloom all winter-killed. *Riley:* Apples, peaches, and pears nearly all killed by spring frosts. *Leavenworth:* Peach-bloom profuse, but fruitage thin; young and vigorous trees stood the winter better than old ones; small fruits abundant. *Woodson:* Peaches entirely killed; all old bearing trees killed; apples reduced one-half by blight. *Morris:* There will not be 5 bushels of peaches raised. *Reno:* But few apples. *Smith:* Very many fruit-trees planted. *Doniphan:* Peach-trees, seeded and budded, generally killed; cherry-trees largely killed; pears a failure; apples and small fruits promising.

NEBRASKA.—*Merrick:* Fruit-trees with southern exposure were ruined by snow-drifts in April. *Linn:* Have heard of no peach in the county; trees injured.

CALIFORNIA.—*Alameda:* Fruit injured by drought and frost. *Lake:* Peaches nearly all killed by frost; apples half killed. *Sonoma:* A very heavy and unusual frost visited the entire fruit region of the State just as the fruit was forming and the grapes in bloom, causing immense losses; Sonoma County, however, loses but a small percentage; peaches and grapes suffered most. *Butte:* Late frosts killed much fruit. *Mendocino:* Heavy frosts have ruined a fine fruit prospect; varieties in bloom were destroyed; apples badly injured. *Nevada:* Army-worm badly injuring fruit, especially grape-vines. *Placer:* Late frosts cut down our fruit one-half. *Napa:* Grape crop injured severely by the frosts of April 3 and 4; crop of the old vines 40 per cent. below last year.

OREGON.—*Lane:* Fruit prospect good; better than last year. *Clackamas:* Late frost injured pears and peaches, yet these crops average higher than for many years.

UTAH.—*Kane.* Fine early prospect of fruit entirely blighted.

Table showing the condition of the crops, &c., on the 1st day of June, 1873.

States.	WINTER WHEAT.		WINTER RYE.		WINTER BARLEY.		SPRING WHEAT.		SPRING BARLEY.		OATS.		CLOVER.		SPRING PASTURE.
	Acreage compared with year.	Average condition June 1.	Acreage compared with last year.	Average condition June 1.	Acreage compared with last year.	Average condition June 1.	Acreage sown this spring compared with last.	Average condition June 1.	Acreage sown this spring compared with last.	Average condition June 1.	Acreage compared with last year.	Average condition June 1.	Acreage compared with last year.	Average condition June 1.	Average condition June 1.
Maine	90	101	96	102	.....	.....	105	99	98	100	102	100	106	109	104
New Hampshire	100	108	99	108	.....	.....	99	99	98	98	101	101	101	106	105
Vermont	76	102	84	104	.....	.....	98	98	98	99	106	96	101	99	99
Massachusetts	97	103	90	107	.....	.....	93	103	102	101	100	98	103	107	100
Rhode Island	.....	.....	83	106	.....	.....	.....	.....	90	93	93	93	100	105	96
Connecticut	101	103	101	105	.....	.....	95	102	97	97	102	102	102	106	102
New York	98	92	96	98	.....	.....	96	95	93	93	100	92	100	95	93
New Jersey	99	98	101	98	.....	.....	.....	.....	.....	.....	92	91	100	70	93
Pennsylvania	101	106	100	101	96	91	95	94	90	93	98	90	101	99	100
Delaware	103	100	105	95	.....	.....	.....	.....	.....	.....	98	103	90	105	100
Maryland	103	97	101	101	.....	.....	.....	.....	.....	.....	99	100	98	88	90
Virginia	99	86	97	89	.....	.....	.....	.....	.....	.....	105	113	97	109	107
North Carolina	95	84	94	91	.....	.....	.....	.....	.....	.....	102	100	109	100	96
South Carolina	92	81	92	96	.....	.....	.....	.....	.....	.....	101	102	85	88	98
Georgia	92	85	100	95	98	97	93	93	.....	.....	101	102	126	99	104
Florida	.....	.....	105	106	.....	.....	.....	.....	.....	.....	104	108	.....	.....	103
Alabama	92	85	95	102	.....	.....	.....	.....	.....	.....	102	108	108	101	100
Mississippi	95	95	89	100	.....	.....	.....	.....	.....	.....	101	103	301	103	102
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	131	101	.....	.....	102
Texas	117	81	105	89	110	100	.....	.....	.....	.....	127	84	.....	.....	93
Arkansas	101	102	104	101	.....	.....	.....	.....	.....	.....	113	105	97	105	101
Tennessee	98	82	96	88	.....	.....	.....	.....	.....	.....	99	99	98	93	94
West Virginia	101	91	95	88	.....	.....	.....	.....	.....	.....	103	101	110	111	105
Kentucky	99	86	92	92	81	65	.....	.....	.....	.....	105	100	90	89	95
Ohio	102	96	97	100	91	94	85	73	89	89	73	85	98	103	104
Michigan	105	90	97	97	102	91	100	96	86	90	95	92	103	97	98
Indiana	100	90	91	95	80	79	.....	.....	83	105	84	94	101	103	106
Illinois	94	76	93	83	.....	.....	127	106	97	96	87	97	98	97	104
Wisconsin	104	80	99	91	.....	.....	101	101	90	100	104	100	99	83	95
Minnesota	102	88	99	101	.....	.....	134	103	98	102	128	103	102	91	99
Iowa	85	67	97	95	.....	.....	121	105	99	103	102	103	108	90	103
Missouri	98	103	97	101	97	90	125	109	115	114	106	104	105	101	102
Kansas	138	110	124	108	103	108	141	110	110	103	122	108	119	106	98
Nebraska	101	99	92	107	.....	.....	173	106	105	102	110	106	.....	.....	99
California	111	84	103	110	108	77	115	98	98	85	103	83	115	92	83
Oregon	107	106	.....	.....	.....	.....	110	106	128	102	115	101	100	100	114

Table showing the condition of the crops, &c.—Continued.

States.	MAPLE-SUGAR AND MOLASSES.		COWS AND CALVES.		SHEEP.		COTTON.		APPLES.		PEACHES.		PEARS.	
	Product of sugar this year compared with last.	Product of molasses this year compared with last.	Average condition of cows this spring.	No. calves dropd compared with average of former yrs.	Proportion of total number of sheep lost by disease or other casualties.	Proportion of total number of lambs dropped this spring died.	Acreage compared with last year.	Average condition June1.	Average am't of bloom this spring.	Average condition of the crop June 1.	Average am't of bloom this spring.	Average condition of the crop June 1.	Average am't of bloom this spring.	Average condition of the crop June 1.
Maine	58	58	103	95	.05	.10	.....	.....	91	93	.....	.....	95	92
New Hampshire	48	48	103	99	.04	.09	.....	.....	91	91	100	100	103	100
Vermont	70	76	104	100	.08	.10	.....	.....	98	98	.....	.....	95	90
Massachusetts	43	43	101	99	.03	.08	.....	.....	53	96	56	73	104	101
Rhode Island	.....	.....	103	98	.07	.07	.....	.....	50	55	102	100	120	120
Connecticut	90	90	100	98	.04	.07	.....	.....	42	63	45	45	93	99
New York	87	90	97	100	.05	.11	.....	.....	93	90	71	83	106	99
New Jersey	.....	.....	97	100	.08	.12	.....	.....	81	91	70	81	97	99
Pennsylvania	87	135	98	99	.07	.12	.....	.....	84	85	42	55	83	89
Delaware	.....	.....	95	101	.05	.07	.....	.....	75	91	108	65	86	95
Maryland	.....	.....	92	98	.10	.16	.....	.....	84	86	81	80	100	96
Virginia	.....	.....	94	98	.08	.12	123	93	102	97	93	96	97	97
North Carolina	.....	.....	95	98	.13	.12	114	85	77	58	86	61	80	62
South Carolina	.....	.....	97	98	.09	.13	102	88	90	55	91	49	96	54
Georgia	.....	.....	98	98	.12	.08	114	94	90	83	96	84	97	88
Florida	.....	.....	113	105	.10	.08	103	102	.....	.....	97	82	.....	.....
Alabama	.....	.....	95	94	.16	.11	109	93	91	81	100	83	93	80
Mississippi	.....	.....	97	98	.12	.09	104	92	87	83	94	80	96	87
Louisiana	.....	.....	101	90	.13	.10	104	94	101	89	100	74	101	78
Texas	.....	.....	91	81	.08	.07	131	86	99	65	97	39	97	54
Arkansas	.....	.....	97	97	.10	.09	110	92	88	85	80	78	87	96
Tennessee	73	71	89	99	.12	.12	115	90	83	40	101	36	90	47
West Virginia	86	83	98	99	.07	.12	.....	.....	96	80	40	47	91	72
Kentucky	81	82	93	97	.11	.15	.....	.....	86	68	82	62	82	67
Ohio	107	99	97	99	.05	.11	.....	.....	92	87	30	48	90	87
Michigan	108	106	96	100	.05	.08	.....	.....	106	100	28	50	100	96
Indiana	94	94	95	98	.06	.13	.....	.....	87	82	58	51	72	75
Illinois	.....	.....	98	100	.07	.11	.....	.....	90	78	46	58	74	70
Wisconsin	111	103	95	100	.05	.10	.....	.....	104	95	.....	.....	99	87
Minnesota	98	100	96	113	.05	.10	.....	.....	87	83	.....	.....	.....	.....
Iowa	74	76	102	106	.07	.10	.....	.....	110	100	.....	.....	93	82
Missouri	100	98	98	102	.10	.17	104	96	91	86	32	35	82	73
Kansas	.....	.....	108	118	.04	.09	.....	.....	122	89	38	46	107	86
Nebraska	.....	.....	103	119	.....	.....	.....	.....	128	98	62	81	112	101
California	.....	.....	101	97	.06	.09	.....	.....	94	86	94	72	92	74
Oregon	.....	.....	110	107	.06	.07	.....	.....	163	120	141	85	110	96

LIVE STOCK.

COWS AND CALVES.—The condition of cows is full average, or above, in all the New England States, Florida, Louisiana, Iowa, Kansas, Nebraska, California, and Oregon. In the other States the depreciation varies from 9 per cent. in Texas to 2 per cent. in Pennsylvania, Georgia, West Virginia, Illinois, and Missouri. The best condition is found in the Northeast and Northwest. New England farmers have long understood the value and necessity of proper shelter and sufficient food for their stock. The severe lessons of experience have enforced the same wholesome ideas in the Northwest, and the beneficial results of extra care are seen in the satisfactory reports from these two sections of the Union. In Norfolk County, Massachusetts, however, it is stated that cows do not look as well as usual, less grain having been fed to them on account of the low price of milk. It is also stated that an unusual number of calves have been killed at less than a week old in order to sell the milk. This practice is very questionable in point of economy and not at all defensible in point of morality. Serious injury to the public health frequently results from the sale of veal prematurely butchered. In the Middle and Southern States the exceptional severity of the winter demonstrated the necessity of better treatment of farm-animals by the depreciation of condition reported by our correspondents. It is necessary to provide not merely against the average vicissitudes of winter, but also against extreme variations of temperature by proper food and shelter.

The number of calves dropped during the year as compared with previous years was above average in the following States: Nebraska, 119; Kansas, 118; Minnesota, 113; Oregon, 107; Iowa, 106; Florida, 105; Missouri, 102; Delaware, 101. It was full average, or 100, in Vermont, New York, New Jersey, Michigan, Illinois, and Wisconsin. In the States below average the depreciation ranged from 19 per cent. in Texas to 1 per cent. in New Hampshire, Massachusetts, Pennsylvania, Tennessee, West Virginia, and Ohio. In Texas the condition of cows and calves was seriously affected in several counties by the unusual severity of the winter and by the scarcity of food on the range. Coryell County reports a depreciation of 40 per cent. as compared with last year. In Southern Texas the annual increase of cattle is estimated at 25 per cent. In Grainger County, Tennessee, the "dry murrain" is destroying many cattle. In some localities cattle have depreciated in condition since the opening of spring, on account of the slow growth of grass. In Republic County, Kansas, many cattle were killed during a heavy storm, lasting through three days of April. Our limited reports from the Territories show a good condition of cattle.

SHEEP AND LAMBS.—The losses of sheep from diseases and other casualties vary from 16 per cent. in Alabama to 3 per cent. in Massachusetts. The heaviest losses are in the late slave States, which report percentage of loss as follows: Maryland, 10; Virginia, 8; North Carolina, 13; South Carolina, 9; Georgia, 12; Florida, 10; Alabama, 16; Mississippi, 12; Louisiana, 13; Texas, 8; Arkansas, 10; Tennessee, 12; West Virginia, 7; Kentucky, 11; Missouri, 10. These severe losses are partly due to the unusual severity of the winter, but are generally attributed by our correspondents to the immense number of worthless dogs kept by the freedmen and others. The losses of New England range from 3 per cent. in Massachusetts to 8 per cent. in Vermont. North of the Ohio River, Ohio, Michigan, Wisconsin, and Minnesota report

5 per cent.; Indiana, 6; Illinois, 7; west of the Mississippi, Kansas and Nebraska lost but 4 per cent.; the Pacific States, 6 per cent.

The mortality among lambs was most severe in Missouri—17 per cent.; Caldwell and Vernon Counties report a loss of 40 per cent. each; Cass, Douglas, and Daviess, 33 per cent. each, and other counties heavy losses. Maryland averages 16 per cent., the heaviest losses being in Montgomery County, 40 per cent.; in Cecil, 30 per cent., and in Washington, 20 per cent. Of the New England States, Maine and Vermont lost 10 per cent. each, the other States varying from 7 to 9 per cent.; the Middle States range from 7 to 12 per cent.; the South Atlantic States from 8 per cent. in Georgia to 16 per cent. in Maryland; the Gulf States from 7 per cent. in Texas to 11 per cent. in Alabama; the interior Southern States from 9 per cent. in Arkansas to 15 per cent. in Kentucky; the States north of the Ohio River from 8 per cent. in Michigan to 13 per cent. in Indiana; the States west of the Mississippi River from 9 per cent. in Kansas and Nebraska to 17 per cent. in Missouri; on the Pacific coast California averaged 9 per cent. and Oregon 7 per cent.

MAINE.—*York:* Farmers are raising all their calves, but few colts. *Somerset:* Sheep have come out well this spring; very few lambs have died. *Androscoggin:* Cows and calves less in number than last year.

VERMONT.—*Franklin:* Unusual number of deaths among sheep and lambs; not to be attributed to any particular disease, but in most instances to indifference and neglect, which generally result from depressed prices and gloomy prospects. All other stock wintered well, and in fine condition.

MASSACHUSETTS.—*Middlesex:* Cattle came out in excellent condition. *Norfolk:* Cows do not look as well as common; less grain has been fed to them on account of the low price of milk. Large numbers of calves are killed less than a week old, so as to sell the milk.

NEW JERSEY.—*Hudson:* Cattle wintered well. Sugar-beets found to be an excellent feed for milch-cows.

PENNSYLVANIA.—*Washington:* Horses plenty and cheap. *Cumberland:* Very few sheep kept.

MARYLAND.—*Howard:* The scarcity of feed brought cows to grass in poor condition. *Cecil:* The unusually cold weather was very fatal to lambs.

VIRGINIA.—*Spottsylvania:* Cattle look well; an increase of calves. *Madison:* Generally in good condition. *King George:* Loss of sheep mainly by dogs; very few by disease. Lambs perished during the cold and variable weather of February and March. *Henrico:* Fine condition of cows, owing to fine grass-crop. *Washington:* Cows very poor, but healthy. Calves doing well. Winter very severe on sheep and lambs; great loss of lambs. *Mecklenburgh:* Very fine sheep in this county. Fully one-third of the lambs dropped have died.

SOUTH CAROLINA.—*York:* Cattle look well; cows and calves are fatter than usual so early in summer; there is some disease prevailing among cattle in the western part of the county, the character of which I have not learned; a considerable number have died; sheep-husbandry will soon be abandoned here; only a few pretend to keep anything like a flock. *Georgetown:* Horned cattle are decreasing in numbers rapidly; sheep too few to take account of.

GEORGIA.—*Columbia:* Cattle rallying from the severe winter. *Heard:* Sheep scarce; stock in low condition.

ALABAMA.—*Conecuh:* Cows in much better condition than last year, and consequently more calves. *Autauga:* A large number of cattle have died from poverty. *Coffee:* Stock of all kinds come out well. *Jefferson:* The loss of sheep nearly all by dogs. *Clay:* The everlasting dogs are after our sheep, and hundreds perish annually by this pest; but for them our county is finely adapted to sheep-raising.

MISSISSIPPI.—*Holmes:* Sheep have suffered from dogs; lambs and stock of all kinds from the severity of the winter, the hardest known in the South for many years. *Attala:* The freedmen are keeping a large supply of dogs, and until this matter is regulated by law, sheep-raising is at an end here.

LOUISIANA.—*Terre Bonne:* Since the war but few sheep have been produced in this county, though it is well adapted to them. *Franklin:* Cows considerably below average condition, not having fully recovered from the effects of the severe winter.

TEXAS.—*Hays:* The cows came out of winter on the range very poor, but are now rapidly improving. But few sheep in the county; they are doing well. *Coryell:* Cows not in as good condition as last year by 40 per cent. *Galveston:* The annual average increase of cattle in Southern Texas is about 25 per cent.

ARKANSAS.—*Arkansas:* Cattle looking well; sheep looking finely, but not many of them.

TENNESSEE.—*Cross:* Cows are improving very fast. *Grainger:* Cattle dying with the "dry murrain."

WEST VIRGINIA.—Braxton sheep lost 10 per cent., lambs 15 per cent., from diseases and other casualties. *Nicholas:* Sheep not so well; dog ravages increasing. *Tyler:* Cattle wintered on short allowance. *Harrison:* Beef-cattle a little below average; horses in good condition.

KENTUCKY.—*Fayette:* Live stock thin.

OHIO.—*Jackson:* Live stock came out of winter quarters in splendid condition. *Warren:* Many sheep killed by dogs.

INDIANA.—*Grant:* Stock in good condition. *Kosciusko:* Dogs have greatly injured sheep.

ILLINOIS.—*Winnebago:* Cattle not looking so well as April 1; sheep largely destroyed by wolves, which are increasing, in spite of all efforts for their destruction. *Scott:* Spring pigs have not done well. *Ogle:* Sheep and lambs generally healthy. *Montgomery:* Large numbers of sheep killed by wolves and dogs. *Boone:* Unusual mortality among lambs; sheep too highly corn-fed.

WISCONSIN.—*Jefferson:* Live stock affected by scarcity of food, especially cattle. *Iowa:* Late cold spring severe on cattle.

MINNESOTA.—*Faribault:* Many lambs lost through wet weather.

IOWA.—*Montgomery:* Fewer calves dropped this season; cows failed to get with calf last season. *Polk:* Stock wintered well; cows and calves of good quality; no sheep lost. *Guthrie:* Decreasing number of calves born, in consequence of a scarcity of bulls.

MISSOURI.—*Polk:* Cattle look well; some died of exposure. *Caldwell:* Lambs dropped mostly in winter; 60 per cent. lost. *Ste. Genevieve:* Dog interest has destroyed sheep husbandry. *Crawford:* A large amount of live stock died of starvation and exposure.

NEBRASKA.—*Merrick:* Sixty per cent. of the sheep perished in April storms.

KANSAS.—*Republic:* Cattle, after wintering in good order, are thin for lack of spring-feed; many killed in the heavy three days' storm of April. *Atchison:* Large per cent. of lambs winter-killed. *Doniphan:* Stock of all kinds doing well.

CALIFORNIA.—*Kern:* Most of the sheep lost died either of starvation or of eating poisonous weeds; about a fourth of the cattle were driven out of the county last winter. *Alameda:* Sheep wintered well; 90 to 95 per cent. of lambs saved; many flocks produced as high as 110 per cent., so many of the ewes bearing twins. *Mendocino:* Sheep remarkably exempt from their usual casualties.

COLORADO.—*Huerfano:* Cattle and sheep doing very well; young animals strong and healthy; lamb-crop splendid. *El Paso:* Losses of sheep entirely due to mismanagement.

IDAHO.—*Nez Perces:* Cattle wintered finely, and are very fat. Epizooty just making its appearance. *Sevier:* Sheep and cows do well.

ENTOMOLOGICAL RECORD.

BY TOWNEND GLOVER, ENTOMOLOGIST.

THE TWIG-GIRDLER.—Mr. G. F. B. Leighton, president of the Norfolk (Va.) Horticultural and Pomological Society, in a letter to this Department, in answer to some questions relating to the twig-girdler, *Oncideres cingulatus*, states that during the past season he has made some interesting observations which may be of interest to entomologists and horticulturists. After remarking on the habits of the insect, he states that a close scrutiny revealed the fact that the insects girdle the twig before depositing their eggs, although he supposed it otherwise the previous season; he also recommends burning the twigs, as spoken of in the report of 1871.

THE COLORADO BEETLE.—Mr. David Peeler, of Johnstown, Cambria County, Pennsylvania, reports the Colorado potato-beetle in considerable numbers. The first brood had attained maturity June 8, and he

says that no doubt other broods will be more numerous, and fears great destruction.

Mr. Chamberlain, editor of the Saint Joseph Herald, Michigan, has forwarded undoubted specimens of the *Doryphora decem-lineata*, covered with a parasitic mite of a dirty reddish-brown color, and very much resembling a mite *Uropoda*, which also infests dung-beetles. These mites adhere to certain dung and carrion beetles, by the tail or a long tube. Dr. Packard, however, states that they attach themselves to their host by a product like silk, which hardens on exposure to the air.

APPLE-TWIG BORER.—*Amphicerus* (*Bostrichus*) *bicaudatus*, or the apple-twig borer, has been very plentiful and injurious in the West and Northwest on apple twigs, grape-canes, &c.

INSECT INJURIES—The farmer's insect enemies have already demonstrated their mischievous presence in different parts of the country. The Hessian fly (*Cecidomyia destructor*) is at work in the wheat-fields of Kent County, Delaware; Fulton County, Pennsylvania; Clarke, Loudoun, and Rockingham Counties, Virginia; Berkeley County, West Virginia; and Stone and Maries Counties, Missouri.

Different species of the *Agrotis*, commonly designated as cut-worms, have begun their ravages in corn, cotton, and other crops in the South and West, especially in the following counties, viz: Queen Anne, Maryland; Clarke, Virginia; Suwannee, Florida; Morgan, Alabama; Woodruff, Arkansas; Greene and Gibson, Tennessee; Lucas, Ohio; Warren, Wells, Posey, and Pike, Indiana; Perry and Bond, Illinois; and Nodaway, Missouri. In many localities these pests are very numerous. In Bond County, Illinois, the late hot weather killed many of them. They were also destructive in the winter-grain of Bourbon County, Nebraska.

The chinch-bug (*Micropus* [*Rhyparochromus*] *leucopterus*) is reported in several counties west of the Mississippi River as depredating upon wheat, oats, and young corn. The injuries were not very perceptible at the date of our reports, but the immense numbers of the insects give very great uneasiness as to the future. They were numerous in Perry County, Illinois; in Benton, Boone, Franklin, Perry, Pulaski, Jasper, and Maries Counties, Missouri. Some complaints also come from Butler, Neosho, and Labette Counties, Kansas.

Two species of the grasshopper, the *Caloptenus spretus*, and the *C. femur-rubrum*, have done very considerable mischief already. From our reports, it is not easy in all cases to decide which of these species is operating in a particular locality. Their most serious ravages appear to have been in Texas, and in the States and Territories west of the Missouri River. In Palo Pinto County, Texas, they had nearly destroyed the wheat and oats. They were also very destructive in San Saba, Gillespie, Burnet, Bandera, Medina, Atascoosa, and Lampasas Counties. In Medina County they hatched till May 5, when they left on a grand northern summer tour. In Atascosa County they ate up cotton and all kinds of vegetation, and the second planting of crops was entirely destroyed. In Monroe County, Iowa, swarms of "red-legged locusts," *C. femur-rubrum*, had arrived on the 28th of May, and were supposed to have come from Texas. The same were devouring the winter-grain in Cuming County, Nebraska. In Hall County they appeared ten weeks earlier than last year. Immense masses of them passed through Burt County northeastwardly, leaving detachments strong enough for serious mischief behind them. They appeared in Clay County, Dakota, May 28. They appeared earlier and more numerous than ever in Edwards County, Illinois.

The cotton-caterpillar, or army-worm, (*Anomis xylinæ*,) appeared in Decatur County, Georgia, May 30, along Flint River. They appeared about the same time in Jackson and Gadsden Counties, Florida, about twenty days earlier than usual. They had also made their appearance in Marion County, Mississippi. In Atascosa County, Texas, they were sweeping the third planting of cotton, the first two plantings having been destroyed by grasshoppers. They had also made their appearance in Victoria County.

The grass army-worm (*Leucania unipuncta*) was destroying the clover in Bedford County, Tennessee. They were also reported in Posey County, Indiana, and in Williamson, Edwards, and Perry Counties, Illinois.

The apple-tree caterpillar (*Clisiocampa*) entirely denuded the fruit-trees of Gibson County, Tennessee. They were also destructive in Union County, Indiana, and Edwards and Wayne Counties, Illinois. In Nevada County, California, an undescribed insect inflicted great injury upon garden vegetables and fruits, especially grape-vines. It preferred to feed upon the young and tender shoots, but did not slight the older ones.

The grub-worm (*Lachnosterna fusca &c.*) was also injurious to various crops in Humphreys County, Tennessee.

In Rapides Parish, Louisiana, cotton is reported as covered with *Aphides*.

In Franklin County, Ohio, apple-orchards, within a few days, have been attacked by a black or dark brown worm, $1\frac{3}{4}$ inches long, the description of which is too meager to identify it. It appears by millions, stripping the trees of both fruit and foliage. They have lately attacked also the forest-trees. They have been observed for two or three years past, but the number has enormously increased. In every case in which hogs have been turned into the orchard this insect has disappeared. It is possible that this may be a *Clisio campa*, of which one species, *C. sylvatica*, attacks forest-trees, and another species, *C. disstria*, fruit-trees, &c.

Potato-bugs are numerous in West Virginia and States further West. Though our reporters are not always careful to distinguish them, it is pretty evident, however, that in most, if not all, cases the Colorado potato-beetle (*Doryphora decem-lineata*) is meant. The counties in which this insect has been observed the present season are the following: Jackson and Pleasants, West Virginia; Highland, Licking, Wyandot, Lucas, and Adams, Ohio; Van Buren, Michigan; Marion and Wells, Indiana; and Putnam, Illinois. Newspapers published in Northern Ohio state that on the 22d of May several immense swarms of Colorado beetles passed through the town of Chasden westward, and that their ravages were very serious. In Adams County, Ohio, the lady-bug (*Coccinella*) was present in great numbers, devouring the eggs of the Colorado beetle. Specimens of the latter insect have been received from Michigan, infested with small parasitic mites, a species of the *Uropoda*.

In Braxton County, West Virginia, the borer (*Ægeria* [*Trochilium*] *exitiosa*) killed some peach-trees. In Union County, Indiana, forest-trees have been damaged by measuring or span worms. In Nez Percé County, Idaho, crickets were destructive of grain crops along the rivers.

CHEMICAL MEMORANDA.

By William McMurtrie, Chemist.

Analysis of wines.—Since the publication of our last monthly report we have been led to make some examinations of wines, with a view to the determination of a means of distinction between the alcohol of fermentation and that of distillation, and the amounts of these constituents which any given wine contains. Our attention was drawn to this subject by the receipt, from Hon. J. N. Douglass, Commissioner of Internal Revenue, of a sample of "Sonoma sparkling champagne," manufactured by J. N. Blum, of New York State, and seized in New Orleans according to the law providing for the taxation of all wines of American manufacture containing more than 5 per cent. of absolute alcohol produced by distillation. The object of the examination in this case was, therefore, to determine whether the wine was produced by the natural process of fermentation, or by the use of brandy or other alcoholic fluids, thus placing it within the limits of the above-mentioned law. The only reliable method for making such distinctions consists in determining the total amount of alcohol which the given wine contains, and considering all above a certain per cent., generally 12 to 14, which is known to exist in a normal wine, as alcohol of distillation. This is, of course, only approximate, on account of the variation in the composition of different wines.

Other experiments for the determination of the purity of wines were made, with a view to proving the presence of adulterations, but they gave negative results. According to Beyse, Bolley, Neubauer, and other chemists who have devoted years to the study and investigation of wines and their manufacture, the separation and determination of the two varieties of alcohol spoken of is impossible. In the course of our investigations we procured, for comparison, a specimen of "Imperial champagne," manufactured by the American Wine Company of Saint Louis, and have made complete analyses of the two, obtaining the following results, in parts per thousand:

No. 1.—"*Sonoma sparkling.*"

Alcohol by weight	107.7
Alcohol by volume	133.0
Extractive matter	102.1
Ash	1.9
Acid (calculated as free tartaric)	6.5

No. 2.—"*Imperial.*"

Alcohol by weight	95.5
Alcohol by volume	122.0
Extractive matter	129.8
Ash	1.4
Acid (calculated as free tartaric)	5.5

Marls.—The following are the results of analyses of calcareous marls: No. 1, sent to this Department by J. L. White, Iola, Marion County, Florida; and No. 2, sent by H. R. Pollard, from Stevensville, Virginia:

No. 1.

Moisture (determined at 130° C)	1.11
Organic and volatile matters	1.07
Peroxide of iron and alumina	1.24
Lime	49.92

Magnesia	2.24
Potash	0.04
Soda	0.13
Carbonic acid	37.82
Phosphoric acid	0.70
Sulphuric acid	0.32
Insoluble matter, silica, &c	5.41
	100.00

No. 2.

Moisture (determined at 100° C)	0.48
Organic matter and moisture not expelled at 100° C	3.76
Peroxide of iron and alumina	1.78
Lime	44.28
Magnesia	1.04
Potash	0.11
Soda	0.31
Phosphoric acid	0.19
Sulphuric acid	0.25
Carbonic acid	34.83
Silica, &c	12.97
	100.00

MUCK.—During the month of February we received from Mr. Luman Andrews, Southington, Connecticut, samples of muck for the purpose of determining the probable composition of a white coating which appears upon the surface of it when thrown out in heaps. The substance was in small scales or crystals. It is of course difficult to state positively what may be its composition, but from the analysis given below it is evidently some soluble sulphate.

The analysis resulted as follows:

Moisture, (determined at 100° C)	3.77
Organic matter and moisture not expelled at 100° C	27.22
Nitrogen	1.09
Protoxide of iron	2.40
Peroxide of iron	Trace.
Alumina	3.32
Lime	1.29
Magnesia	1.01
Potash	0.41
Soda	0.14
Phosphoric acid	0.10
Carbonic acid	Trace.
Sulphuric acid	1.15
Silica, &c	58.10
	100.00

The residue remaining after removing the organic and volatile matters, by incineration, is very fine and pulverulent.

FERTILIZER.—The following are the results of a complete analysis of a sample of fertilizer manufactured in Washington, D. C., and presented for analysis by Mr. S. T. Suit, corner of Pennsylvania avenue and Thirteenth street:

Organic matter and moisture	21.93
Nitrogen (equivalent to 1.34 per cent. ammonia)	1.10
Protoxide of iron	2.50
Peroxide of iron	Trace.
Alumina	5.04
Lime	4.56
Magnesia	1.11

Potash	0.92
Soda	0.27
Chloride of sodium	0.74
Soluble phosphoric acid	Trace.
Insoluble phosphoric acid	2.07
Sulphuric acid	0.96
Carbonic acid	1.27
Silica, &c	57.53
	100.00

NOTES.

SUGAR.—It being a well-known fact that the crystallization of sugar is materially affected by the presence of mineral matter in the solution, M. Monier conceived the idea of estimating the amount of ash contained in corresponding sugars, with a view to the determination of the amount of crystallizable sugar therein contained. He found that multiplication of the weights of ash by the co-efficient 5, and subtracting the product from the number obtained by the saccharimetrical test, left a remainder which indicated the weight of refined sugar which should be obtained from the product to be treated.

Suppose that titration of a sugar solution shows 95 degrees and 1.50 of ash. The latter weight multiplied by 5 gives 7.5, which subtracted from 95 leaves a remainder of 87.5, representing the quantity of sugar which may be produced.

AGARICUS FŒTENS.—The following are the results of an analysis of *Agaricus fœtens*, made by Mr. Sacc:

Water	67.20
Mannite	0.60
Pectic acid	0.09
Fibrin	4.66
Bassorin	1.55
Lignin	20.09
Fat, acid, odorous and coloring matter	0.68
Ash	5.13
	100.00

TOBACCO.—It is generally well known that when evil effects, or indeed any effects whatever, follow the use of tobacco, they are due to the nicotine contained in the leaf. M. Heubel has shown, from certain investigations upon the chemical properties and poisonous action of tobacco-fumes, that, since the alkaloid is practically inactive in the free state, it is probable that the nicotine is contained in the leaf in the state of a salt.

GROWTH OF TREES.—M. Breuil states that, while visiting a small park connected with the Chateau d'Compeigne, he observed that some of the horse-chestnut trees had been decorticated to a height of 30 to 40 centimeters, and ascertained that this condition had existed a long time. Being surprised to find the trees living in this condition, he determined to seek the cause of this unusual continuation of vitality. Knowing the possibility of plants receiving their nourishment, in the way of organic matter, from the atmosphere, he determined upon an estimation of the percentage of mineral matter contained in the wood of the part decorticated and that above it, in order to find the possible source of this important element so necessary to the healthy growth of plants. The following statement indicates the proportions of ash contained in the different parts:

	Per cent.
Part decorticated	0.916
Part not decorticated	0.413

The latter, therefore, contains but about one-half as much mineral matter as the former, leading to the belief that the fluids circulating by osmose furnished the mineral matter to the growth of the new wood at the expense of the old, which seems quite evident from the following:

Woody layers subjacent to the bark	1.20 per cent. of ash.
Woody layers situated below the former	0.70 per cent. of ash.

In order further to establish this fact a sample of wood from a tree of normal growth was taken, the determination of the ash of which shows that the inner woody layers contain a much larger proportion of ash than the outer layer, thus:

Central woody layers contain	1.48 per cent. of ash.
Exterior woody layers contain	0.92 per cent. of ash.

TANNING-MIXTURE.—The following formula for a tanning-mixture has been given as applicable to all kinds of skins.

For 100 pounds, take 10 pounds tobacco-root, 60 pounds caochou, 20 pounds sumac.

It is stated that 100 pounds of this mixture in 125 pounds of water will tan hides completely in six days and prepare them for the currier.

EFFECT OF MANURES UPON CINCHONAS.—Mr. Broughton, of the Ootacamund plantation, in the department of Madras, has shown that while manure fails to effect an increased and more vigorous growth of cinchonas, it produces a much greater alkaloidal yield. Thus, some plants of *Cinchona succirubra*, three years old, treated each with one pound of sulphate of ammonia and a like quantity of guano, show the following proportions of alkaloids, compared with those unmanured:

	Manured.	Unmanured.
Total alkaloids	7.25	4.89
Quinine	2.45	1.78
Cinchonidine and chinchonine	4.80	3.11

Treatment with guano gave the following results:

	Manured.	Unmanured.
Total alkaloids	5.29	4.76
Quinine	0.91	1.04
Cinchonidine	4.38	3.72

These results show that the use of guano is unprofitable, and Mr. Broughton recommends that *C. succirubra* be grown without its use.

C. officinalis, which is much more sensitive to the various conditions to which it may be subject when treated with one pound of guano to each plant offers the following comparison:

	Manured.	Unmanured.
Total alkaloids	6.51	3.98
Pure quinine	4.41	2.40
Cinchonine and cinchonidine	2.10	1.58

The same, treated with three-quarter pound sulphate of ammonia to each tree, shows:

	Manured.	Unmanured.
Total alkaloids	5.76	4.54
Pure quinine	3.11	2.54
Cinchonidine and cinchonine	2.65	2.00

Treated with about four barrow loads of farm-yard manure, they show:

	Manured.	Unmanured.
Total alkaloids	7.49	4.68
Pure quinine	7.15	2.40
Cinchonidine and cinchonine	0.34	2.28

It seems therefore that farm-yard manure is more valuable in this particular than artificial manure, since it favors the production of quinine rather than cinchonidine and cinchonine.

HEATING OF WINES.—The work of ascertaining and removing the cause of the deterioration of wines has, for a long time, been the subject of many experiments among European chemists, and the question arising at the outset, whether the agent employed for the prevention of the disease produced by a certain microscopic fungus would affect, with other matters, the bouquet of the wine, was one which could be answered only by time and experience. To this end, at the suggestion of Pasteur, several brands of wine which had been subjected to a temperature of 50° to 75° C. were stored in the cellar of the Normal School of Paris, alongside of some which had not been thus treated. In 1869 the different brands were tested by the *Commission Syndicale de vins de Paris*, when it was found that the heated wines were superior to the other brands. In 1872, again at Pasteur's suggestion, a second examination was instituted by other experts, who embodied the results of their investigations in a protocol showing that, with regard to twelve brands, those which had been heated were superior to those which had not been thus treated; with regard to three brands, that which had not been heated was equally as good as that which had been heated; and of nine brands, that which had been heated was good, while that which had not been heated was spoiled. Referring to the protocol, Pasteur states that heating may be regarded as a very efficient agent for preserving the quality of common as well as of choice wines. Experiments of six to seven years duration have shown that even the finest wines, when suddenly subjected to a temperature of 55° to 65° C., are not only no longer subject to disease, but are improved, attaining a quality superior to that produced by age in the absence of disease.

To some of the statements of the protocol Pasteur made objections. Thus it was concluded that heating gradually affects the color and bouquet of choice wines, but he holds that by heating the former becomes much more brilliant while the latter is improved, which fact is fully illustrated in the wines of Chambertin and Volnay. It was also recommended that the wines be subjected for several months to a low temperature, but this he has shown to be unprofitable. He further states that it is better to heat new than old wines, and insists that when they are to be heated in quantity, they must be kept in the apparatus employed in the same quantity as in bottles before, during, and after the heating, and that the air must be, as far as possible, excluded, since it may give rise to a flavor like that imparted by boiling which is generally unpleasant. The want of success which has so often attended the heating of wines on a large scale is due to the failure to observe these precautions.

EUCALYPTUS GLOBULUS.—The following communication, descriptive of the *Eucalyptus globulus* and its properties, was lately furnished to this Department by M. Stanislaus Martin, president of the Society of Pharmacy of Paris:

The eucalyptus is a large and lofty tree of the myrtaceæ family, the *Icosandria monogynia* of Linnæus. It was discovered in Van Dieman's Land in 1792, by Labillandiere. There are thirty varieties of this tree, the growth of which is very rapid; its wood is as hard as that of the oak, and is suitable for house and ship carpentry, and for cabinet-work.

The word eucalyptus signifies *fully capped.* The distinctive character of the tree consists in a kind of conical cap that covers the bud, which is thrown off as the stamens expand. This cap forms the limb of the calyx, the base of which adheres to the ovary. There is no corolla; the numerous stamens are attached to the apex of the tube of the calyx. The ovary is inferior, and bears a style and single stigma; the fruit is a capsule of four polyspermous cells; the flowers are usually of a yellow color, and emit a strong resinous odor; they form in groups, or appear singly at the axes of the leaves.

These trees abound in the forests of New Holland, and have been transplanted to Africa, from thence to Spain, and afterward to France. They thrive marvellously, commonly attaining a height of more than a hundred feet. The trunk grows straight to the distance of half its height; the branches become crooked as they are developed; the bark is of a dark gray color, and detaches itself from the tree. The leaves are of various sizes; some of them are more than 4 inches in length and over 2 inches in breadth; twenty of these leaves, about 2 inches wide and 2½ inches long, weigh, when dried, 8 grams. The color of the leaf is a deep gray; its outer surface is of a greenish-blue tint, while the inner surface appears to be covered with a whitish powder; viewed through a microscope, the vesicles filled with essential oil may be seen. Their flavor is warm and aromatic, similar to that of peppermint when added to a little turpentine; to this sensation there succeeds a bitter-sweet taste.

The leaves of the eucalyptus are highly prized in certain portions of Spain; at Cordova, for example, where they are prescribed as a substitute for quinine. Mons. Renaud employed a great number of workmen in this city. As soon as any of these felt the symptoms of intermittent fever, he compelled them to take a gram of this leaf, reduced to powder, three times a day; they were invariably cured in a few days.

On the 6th of March, 1867, the writer of this article presented to the Society of Pharmacy, of which he is the president, a flask of the volatile oil of the eucalyptus and a sample of the plant.

This essence possesses an aromatic odor; it is colorless and of a fluidity equal to the essence of mint. Placed in contact with nitric acid, it acquires consistency and becomes resinous. It is believed that its action is antiperiodic. It would be interesting to ascertain if the leaves of the eucalyptus, when cultivated in France, would obtain the same properties as those which are taken from the trees of Spain and Africa. Our malarial fevers would, in this case, yield to this agent, and it would also be a great economy to the poor classes, as the sulphate of quinine is at the present time, and will long continue to be, of a very high price, although we have no fear that the precious cinchona tree will disappear for many years to come.

The following communication is of later date:

* * * * The *Eucalyptus globulus,* which we first brought to the attention of the learned world and of therapeutists, has at length, we hope, taken its proper place in the medical practice. Mons. Ramel had the honor of introducing this magnificent and valuable vegetable production into Europe; Messrs. Cloez, Gimbert, Regulus Carlotti, and Tristany have acquainted us with its chemical composition and its therapeutic effects, but Professor Gubler alone has given us a complete work upon this subject.

Let us hope that speculation and infatuation will not seize upon this plant for commercial purposes, a misfortune that has too often attended important discoveries.

We have received barks of the *Eucalyptus globulus* from the north of France and Australia, compared them with those of Africa, and are prepared to admit that those barks and leaves that are obtained from warm climates should be employed in preference to others.

It is well known that vegetation, in every period, increases its bulk by means of materials that it gathers from without; that among certain *dicotyledonous* trees this increase takes place in the exterior layer of the liber or inner bark of the tree; that this phenomenon operates very slowly in certain vegetables and rapidly in others.

The *Eucalyptus globulus* increases with great rapidity. In Australia the leaves and bark are rich in essential oil, which exudes whenever the bark or a leaf is rent by an insect or any foreign body. This essence, coming in contact with the atmospheric air, forms little globules that are detached by the action of the wind.

As it is much more easy to procure barks from Africa than from Australia, those of Africa should be used for therapeutic purposes.

These barks are classified as young, living, and dead barks. The very young barks have no aroma, and are rolled together; their color is analogous to that of the cinnamon of China. Those which are naturally detached from living trees are very good; those procured from dead trees are worthless. Viewed through a microscope they appear to be covered with a cryptogamous vegetation, which defaces them. Barks of dead trees have little odor, are easily separated, and weigh a third less than those taken from living trees.

The barks of the eucalyptus are composed of layers methodically superposed, which are susceptible of division after a long steeping in water. The laminæ are formed by

longitudinal fibers held together by a substance to which chemists have given the name of *entraites*, or tie-beams. The interior of the bark is smooth and of a deep yellow color; a branch of the eucalyptus deprived of its leaves has a fibrous consistency; this fibrous nature disappears as the wood grows old. The taste of the living barks is more decidedly aromatic than that of the dead barks, and both leave in the mouth but little of their soluble principles; for commercial purposes and for the extraction of the essence the leaves should be employed.

The writer has another article on the chemical composition of the essence of this plant. Since the introduction of the eucalyptus, the plant has been the subject of many articles, the most complete of which has been published by Mons. Gubler in the Therapeutic Bulletin.

As I have foreseen, quackery has overstated the properties of the plant, and it will happen to this as to others that its popularity will be ephemeral, because its virtues have been exaggerated.

Undoubtedly the papers of Paris will maintain that this plant has little virtue. To-day they announce a syrup, a powder, an alcoholate, an aqueous or alcoholic extract of eucalyptus.

The globules of the eucalyptus are now in vogue, and those who are striving to turn them to profitable account have exaggerated their virtues, much to the prejudice of the plant. It is an antiperiodic and a stimulant; it acts only by the essential oil which it contains. It is not necessary to attribute any other virtues to it.

A NEW CEMENT.—By a series of experiments Dr. Grünberg has succeeded in preparing a cement from *Kieserite*, an associate and constituting about 12 per cent. of the so-called *Abraunsalze* of the salt deposits of Strassfurt, Prussia. By mixing, in presence of sufficient quantity of water, one equivalent (36 parts) of hydrate of lime with two equivalents (138 parts) of kieserite, consisting of water and sulphate of magnesia in equivalent proportions, he obtained a pasty mass which, upon heating, afforded a solid compound, composed of sulphate of lime and sulphate of magnesia, plus magnesia, which seemed devoid of useful properties. However, if the pasty compound be strongly ignited, pulverized, and mixed with water, a solid mass is instantly produced, which in hardness resembles marble rather than gypsum, and is capable of being polished and of withstanding the action of moisture.

SUGARS OF THE THIRD CRYSTALLIZATION.—Comptes Rendus of March 10 contains a memoir upon "raw sugars of the third crystalliza, tion," by M. Ch. Violette, from which he draws the following conclusions:

1st. Sugars of the third crystallization of the north of France contain besides the sugar and earthy matters, the mineral and organic princi ples of the molasses.

2d. Molasses especially rich in chloride of potassium may, in certain conditions, furnish sugar of the third crystallization of composition very different from that of the ordinary sugars of the third crystallization. These sugars may contain considerable quantities of sucrate of the chloride of potassium, isomorphous with cane sugar.

3d. The method of incureration of sugars by the addition of sulphuric acid, at present in general use, gives amounts of ash above the normal weights of that of raw sugars. The difference is greater as the ashes are richer in soda salts and alkaline carbonates.

4th. The ash of the raw sugars of the north in question represents three-fourths the weight of salts contained in the sugars.

BOTANICAL NOTES.

By Dr. George Vasey, Botanist.

Fertilization of wheat and other grasses.—In the monthly report of this Department for October last is an article by the Commissioner on the "Cultivation and hybridizing of wheat," in which are given the results of some observations made by his direction, which results confirmed his opinion that the fertilization of wheat was effected in the closed flower, and hence that hybridization does not naturally occur between different varieties growing in close proximity. This subject, in its reference not only to wheat but to other grasses, appears to have also received some attention in Germany, particularly by Professor Hildebrand, of Frieburg, and is made the subject of a paper read by him before the Berlin Academy of Sciences, October 31, 1872.

A brief synopsis of this paper, from a translation published in the (London) Gardener's Chronicle and Agricultural Gazette, is as follows:

With respect to their floral structure grasses may be classified under the following heads:

1. *Diœcious grasses.*—Here, the two kinds of floral organs, viz, stamens and pistils, grow on distinct plants, one portion producing only staminate flowers, and the other portion producing only pistillate flowers. There is but a small number of species of this class. The buffalo-grass of the plains (*Buchlœ dactyloides*) is one of them.

2. *Monœcious grasses.*—In this class the staminate and pistillate flowers occupy different parts of the same plant. In Indian corn (*Zea mays*) the staminate flowers occupy the summit of the plant, while the pistillate are arranged upon an axis proceeding from a lower portion of the plant. In wild rice, (*Zizania aquatica*) the fertile flowers occupy the upper part of the panicle, and the staminate flowers the lower part.

3. *Polygamous grasses.*—Here a portion of the flowers may be perfect, that is, combining both sexes, and a portion will be either wholly staminate or wholly pistillate. Some species of *Panicum* and of *Andropogon* are of this description.

4. *Perfectly flowered grasses.*—This includes the larger portion of grasses, especially of temperate climates. In this division fall also most of our cultivated grains, as wheat, oats, and barley.

In grasses of the first class, *i. e.*, diœcious grasses, the pistillate flowers must necessarily be fertilized by the pollen from entirely distinct plants, just as among higher plants the pistillate willow is fertilized by the pollen from the male willow of the same kind but on a different tree. On the western plains where the buffalo-grass prevails, large patches may be found having only male flowers, and other patches occur having only female flowers. The seed of course is only produced upon these female or fertile plants. Until this fact was discovered, the two sexes were supposed to be different species, and were known by different names.

In the monœcious grasses also, as in the common Indian corn, (*Zea mays*,) the pistillate flowers must be fertilized from without; the pistils are thrust out from the husky covering and exposed to the influence of any pollen which may fall upon them; hence the readiness with which different varieties, if planted in proximity, hybridize or mix with each other. The same is true to a large extent with polygamous grasses.

In the case of the perfectly flowered grasses, we find several provisions existing, which affect the mode of fertilization.

1. In some species, as in the sweet-vernal grass, (*Anthoxanthum*,) the stigmas are thrust out of the flower some time in advance of its own stamens, and are fertilized by pollen from earlier developed flowers. A similar arrangement exists in the meadow-foxtail (*Alopecurus*) and many other grasses. In these cases there is usually only a short period during which the pistil remains fresh and capable of fertilization; in *Phalaris arundinacea*, however, Professor Hildebrand found the stigmas fresh and receptive for a longer time.

2. In by far the larger number of grasses the male and female organs mature at the same time in the same flower; but even here there are circumstances which in some species seem favorable to self-fertilization, and in others to cross-fertilization. Thus, in rye, the anthers are partly extended beyond the points of the inclosing chaff, before the full expansion of the flower, so that the pollen first shed goes to the fertilization of other flowers which are already open. When the flower fully expands, and the rest of the pollen is shed, only a portion is likely to fall upon the stigmas of the same flower owing to the relative position of the parts, the greater portion being conveyed to other flowers. In the common oat (*Avena sativa*) the flowers, in *dry weather*, open in the afternoon and toward evening. The anthers hang out of the flower, and the pollen is, to by far the greater extent, dispersed to other flowers; but in damp and cold weather the flowers remain closed, the pollen is shed within the flower, and self-fertilization is inevitable. The flowers of rice (*Oryza sativa*) open in the morning, and the arrangement is nearly the same as in the oat, favorable to cross-fertilization.

In all the observations made by Professor Hildebrand on different species of barley, *no* flowers were found to be open, but all were self-fertilized, even before the spike or head was protruded from its sheath. However, another observer, Delphino, asserts that there is at least the possibility of cross-fertilization in barley. He states that the spike of *Hordeum vulgare* has six rows of flowers, and that the flowers of the two middle rows never open, and are, therefore, subject exclusively to self-fertilization, while the flowers of the other four rows open slightly and disperse a portion of their pollen in the air. In *Hordeum distichum* the flowers are also in six rows, but only those of the two middle rows are perfect and fertile, while those of the other four rows are imperfect, containing stamens only. The fertile flowers never open, and are fertilized, while the spike still remains buried in its sheath. When first protruded the stigmas are already dead, thus showing the highest degree of self-fertilization. There are, however, he asserts, among these fertile flowers a very few which are destined for cross-fertilization; these remain five or more days longer unpollenized than the rest, and they open slightly, so as to allow the entry of foreign pollen, especially from the male flowers.

With respect to wheat, Delpino asserts that the idea that wheat is necessarily self-fertilized has arisen erroneously, from the fact that the flowers remain open only for a very brief time. In a wheat-field only a very small proportion, perhaps one in 400 of the flowers, are open at one and the same time. The opening of the flower of wheat is a very interesting phenomenon, and happens with wonderful rapidity. While the flowers are still closed, a motion of the glumes is observable; these separate suddenly in a moment; at the same time the anthers protrude laterally from the opening; they open and about one-third of the pollen falls inside the flower upon its own stigma, while the remaining two-thirds are dispersed into the air; the anthers are emptied in a moment, and the whole process does not occupy more than half a minute. The

stigmas remain receptive for a considerably longer period, and can then receive the pollen of other flowers.

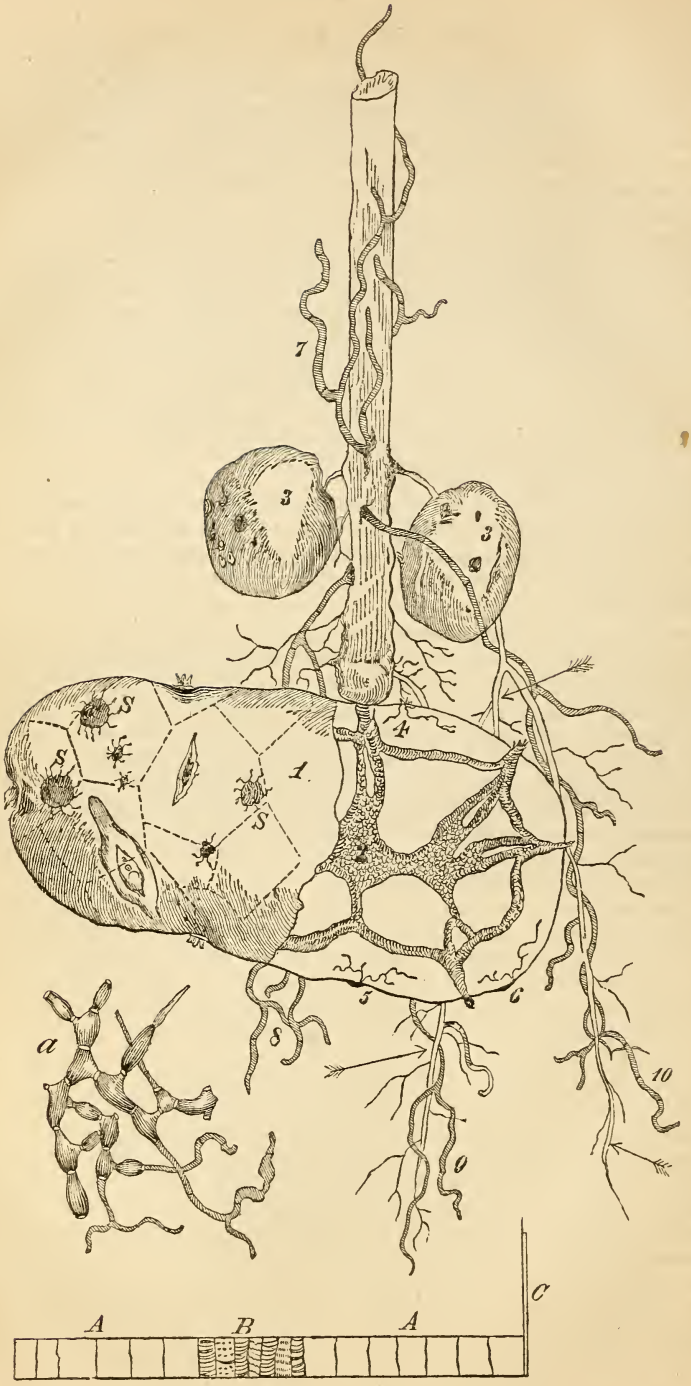
Professor Hildebrand remarks, in conclusion, that the conditions of fertilization or pollenation must be observed in each single species, since closely allied species of the same genus show strikingly different phenomena in this respect; and moreover each separate species may exhibit very different behavior when exposed to different conditions of climate. To this end it is hoped that a series of observations on this very important and interesting subject may be forthcoming from botanists in different countries.

THE BABYLONIAN OR WEEPING WILLOW.—A writer in Silliman's Journal says that from the investigations of Karl Kock, it appears that the "Garab" upon which, according to the psalmist, the captive Jews at Babylon hung their harps, is not the weeping willow, named *Salix Babylonica* by Linnæus on account of the current tradition; and indeed is not a willow at all, but a poplar. Ranwolf had long ago concluded that the tree was not a willow. The *Salix Babylonica*, whose hardiness indicates a cooler climate than that of Mesapotamia, is now regarded as of Chinese or Japanese origin; so that its specific Linnæan name gives place to that of *Salix pendula*, Mœnch.

ROCKY MOUNTAIN OAK.—Mr. Serono Watson, in the America Naturalist for May, gives descriptions of twenty-five new plants growing in Utah and Arizona collected last year by the expeditions of Lieutenant Wheeler and of Major Powell, with the following note upon the Rocky Mountain Oak:

Quercus undulata, Torr. The common low oak of the Rocky Mountains and Wahsatch ranges southward to New Mexico and Southern Utah. An examination of considerable material shows that it is quite variable in its foliage, and includes several reputed species and forms. The typical form has oblong leaves with acute or acutish, entire, divaricate, mostly triangular lobes, the sinuses reaching half way to the midrib. This is also *Quercus Fendleri*, Lehm. With large leaves and the lobes sometimes coarsely notched, it becomes *Q. Gambelli*, Nutt., and *Q. Douglasii*, var. *Neo-Mexicana*, D. C. With the lobes more obtuse it is *Q. alba*, var. *Gunnisoni*, Torr.; and with the lobes less divaricate and more oblong, frequently notched at the apex, and the rounded or narrow sinuses reaching often nearly to the midrib, it is the more prevalent northern form, *Q. obtusiloba*, var. *depressa*, Nutt., and the var. *Utahensis*, D. C. The extreme states appear quite distinct, but intermediate forms abound, and there seems to be nothing in the flowers or fruit to distinguish them.

Fig. 6.



MICROSCOPIC OBSERVATIONS.

By Thomas Taylor.

Under date of April 25, 1873, Martin McKenzie, of Boston, Massachusetts, informed this Department that he had planted in his hothouse, on January last, a healthy Early Rose potato, and also one of the same variety affected with the fungus, *Peronospora infestans*. While growing, both were treated as nearly alike as possible, were supplied with a superabundance of water to induce fungus growth, and were subjected to about 70° of temperature. Both varieties sprouted and sent forth the usual supply of rootlets, stalks, leaves, and tubers.

The original tubers used as seed in these experiments, with their appendages, were forwarded to this Department for microscopic examination, the object being to ascertain the relative value of diseased potatoes, as compared with healthy ones, when used for seed. The so-called healthy seed-potato, with its appendages as received, was separately examined for fungoid forms, and especially for that of *Peronospora infestans*, but neither its spores, mycelium, nor fruit were found on them.

My attention was next directed to the unhealthy "seed-potato," its stalks, leaves, rootlets, and tubers. On the surface of the tubers were plainly visible, to the naked eye, small brown spots, represented by S, S, S, I, (Fig. 6,) some of which I carefully removed with a pen-knife. These I placed in strong nitric acid for several minutes. Other portions were submitted to the action of boiling caustic potash. As the mineral acids and alkalies render starch soluble and transparent, or rather transform it into new substances which are transparent and soluble, fungoid forms, if present, are more easily discovered by the use of these solvents. Potash has also the power of rendering the albuminates of the skin soluble, and by its use the fungoid masses S, S, S are more easily separated from the cellular matter of the potato. The fungoid cells are also rendered more transparent. When the brown spots S, S, S are viewed under a power of about 275 diameters, amber-colored budding cells, represented by *a*, are observed, from which protrudes amber-colored branched and jointed mycelium, as represented by 4, 5, and 6. Before examining the rootlets (see arrows) I submitted them to boiling caustic potash a few minutes, to render them soft and easily compressed, and brought into focus. 7, 8, 9, and 10 represent their mycelium and rootlets. Their relative size is represented by the scale A, C. A, A represent the parenchyma cells of the rootlets, B their vascular bundles, and C the mycelium on the rootlets. The cells *a* have the same relative size. 2 represents the vascular bundles of the tubers. The dark spots on the young tubers, 3, 3, are composed of clusters of budding spores, as represented by *a*, being of the same form and color as those of the parent tuber. The dotted lines on 1 represent the cellular structure of the skin of the tuber highly magnified.

The stalks and leaves of the unhealthy Early Rose potato, although presenting to the naked eye a healthy appearance, were found to be interspersed with amber-colored mycelium peculiar to potato-rot. The only appearance observable to the naked eye was brown spots on the new tubers, the skins of which otherwise were smooth and transparent. Their fungoid markings, to an inexperienced eye, would not readily attract attention, as they appear like small portions of brown earth.

On comparing the freshly-cut surfaces of the healthy and unhealthy tubers mentioned, the latter presented a mottled and translucent appearance, while a section of the healthy presented a more uniform color. It is clearly shown in this case that "as we sow so shall we reap."

On the 12th of April last, a healthy Early Rose potato and a New Mexican variety were planted in one of the hot-beds of the Department. Over both was placed a glass shade, the object being to produce, by artificial means, disease in their foliage. The temperature of their atmosphere ranged about 68° F. The sand in which the tubers were placed was bountifully supplied with water. In consequence of these conditions, a very moist atmosphere was kept up in the glass shade. In a few days the tubers sprouted—the Early Rose first. The foliage of both varieties gradually expanded, but it soon became evident that the leaves of the Early Rose, especially the larger ones, had become affected with what appeared to be "curl of the leaf." Upon examination it seemed that their upper surfaces expanded more rapidly than their under. The leaves of the New Mexican variety became affected similarly, but in a less degree. I examined the leaves under a power of about 90 diameters, but failed to discover any fungoid form. I next ground various portions of the respective leaves into a pulp, placing portions, thinly spread out, under a power of about 300 diameters, but failed to find fungoid cells of any kind developed or in progress. Many portions, however, of the vascular bundles seemed filled with water instead of air, a condition which is not usually found, even when leaves have been left in water for some time. The under surface of the leaves exhibited brown markings, and, when examined with a power of about 90 diameters, the color was seen to be confined to the outward boundary lines of the parenchyma cells of the leaf, showing that the cellular tissue was undergoing oxidation. Within a few hours the central parts dropped out, and the foliage became riddled with holes.

Oxidation is not always accompanied by fungus growth. While a taper is burning it is undergoing oxidation, but the conditions of change in this case render the simultaneous production of fungus cells impossible, yet, when fungus cells are undergoing the process of budding, oxidation of the cellular tissue seems to be necessarily a secondary condition. The "curl of the leaf" may not always be the result of a fungus growth, but the conditions which produce it will necessarily retard the growth of the plant commensurate to their extent, and pave the way for fungoid growths. I next put the plants into separate flower-pots, and exposed them to the influences of the open air. In a few days the foliage of both kinds attained a healthy color, but was stunted in growth. After three weeks' exposure, under favorable conditions as to heat and moisture, the foliage of both appeared healthy.

On June 9, the New Mexican plant put forth flower-buds; while the other, although known to be an early variety, did not exhibit any. While both plants were passing from their unhealthy condition in the open air, many of the leaves of the Early Rose plant wilted and died; the leaves of the other remained a healthy green throughout, showing a superior vigor.

On the 19th of May last, three varieties of New Mexican potatoes were planted in the Department grounds for experimental purposes, and notwithstanding the extreme dryness of the atmosphere during the last thirty days their growth has proved highly vigorous. The stalks are numerous and from 10 to 12 inches in height. The foliage is abundant, has a very healthy appearance, is highly wrinkled, of a dark green color,

and is remarkably free from insect injuries. At this date (June 13th) their buds are forming.

Judging from present appearances, any of the three varieties would prove highly valuable for localities subject to a hot and dry atmosphere.

The New Mexican potatoes, although not so mealy as the New York Peach-blows, white and red, are dry and of good flavor. Their cultivation in the northern States will doubtless modify the structural and chemical properties. At present they seem wholly free from the fungus of potato-rot. In order to test their anti-fungoid properties more fully, samples have been forwarded to experienced farmers in the State of Massachusetts, and other States, to be planted with other varieties known to be very liable to potato-disease. Any practical results derived from experiments now in progress will be given in a future article.

DETERIORATION OF AMERICAN COTTON.

By the Commissioner.

The production, sale, and consumption of cotton are subjects of so much interest, that everything pertaining thereto should be well understood. Planters, as well as merchants and manufacturers, may profit by lessons elicited by a comparison of the experiences and observations of those engaged in its cultivation, marketing, and manufacture. The correspondence of this Department with intelligent planters of the South made the impression that the quality of cotton offered in our markets had greatly deteriorated within the last twelve years, and thus induced me to prepare the following circular, requesting cotton-growers of the South and manufacturers of the East to furnish the results of their observations on the subject:

To ——— ———:

Questions of some importance to the country have arisen, which it is desirable should be solved by the opinions of manufacturers as well as planters. 1. Has the staple of American cotton deteriorated in quality within the last twelve years. If so, (2,) to what cause is it attributable?

It has been suggested that deterioration is traceable to certain phases of the cotton market, which induce planters to study quantity rather than quality; that dealers do not judiciously discriminate between qualities in fixing the price.

To aid this Department in the investigation of the subject for the benefit of manufacturers and planters, I will be obliged to you for your opinions, predicated upon your experience and observation of the subject.

I am, most respectfully, your obedient servant,

FREDK. WATTS,
Commissioner of Agriculture.

This circular was directed to fifty manufacturers of the Eastern States, and to as many planters of the Southern States; and from very many of both classes answers were received, satisfactorily showing that while the quality of cotton now brought to market is quite inferior in condition to what was produced twelve years ago, that condition is attributable to causes which do not *necessarily* enter into the production or sale of the commodity.

It seems to be very clear that the present production is, in a large measure, in the hands and under the direction of a less intelligent class of planters, who do not appreciate the importance of a judicious selection of seed, proper cultivation, and especially a careful preparation for the market. Now, while there are other planters, who are intelligently

guided in these requisites, the productions of both classes meet in the same market, and should command a discrimination as to quality and price, which, it is complained, they do not get. On the contrary, the conclusion is that dirty cotton is most profitable, because it brings more money per acre than that which is sold by the careful planter.

This seems to be an evil which time and circumstances must cure; and it is therefore an injudicious conclusion, that it would be better to adopt the example of the planter who sells dirty cotton. It cannot be that the merchant or manufacturer will long fail to discriminate between the good and the bad, when they are marked by such distinctive qualities as clean and dirty. This, then, may be looked upon as a temporary evil. And we may hope that its cure will necessarily work a corresponding change in the careless class of planters to which we have alluded; for if they have to pay for hauling dirt, for which they get no price, and which decreases the value and price of their cotton, their losses will teach them to separate the former from the latter. It is assuming too much to suppose that both the merchant and the manufacturer will continue insensible to the advantages which arise from a choice between good and bad. The evil complained of may last for a time; but detection and change are certain.

We cannot doubt for a moment that the spirit of improvement in agriculture actuates the planters of the South as well as the farmers of the North; and that the fact that better seed will produce better products, is greatly appreciated and acted upon everywhere. But if the merchant and manufacturer fail to appreciate the value of a good article of produce, as compared with an inferior one, it will go very far to discourage the effort to excel.

All the information which I have been enabled to gather on this subject leads to the conclusion that there is no deterioration in the cotton staple, but that efforts to improve its cultivation and quality are, in some degree, thwarted by a want of proper discrimination in the market prices between the qualities offered for sale.

AUSTRALIAN WOOLS.

In the monthly report of the Department of Agriculture for July, 1872, mention was made of the reception and deposit in the museum of the Department of thirty-three prize fleeces of Australian wools, forwarded by the Agricultural Society of New South Wales, with a view, as stated by the secretary, Mr. Joubert, of enabling buyers of wool and breeders of sheep in the United States to see what was produced in Australia, and of bringing about such an exchange of blood in sheep as might be of mutual benefit to the two countries. These wools were duly placed on exhibition in the museum, where they now remain; samples were likewise sent to a number of wool-growers' associations in the western and northern States for inspection, and for the purpose of eliciting the opinions of those presumed to be competent judges in the matter. As the Department, however, had no means of establishing such a system of exchange of animals as was suggested, it could only refer the proposition to individuals and associations for their action. Among those to whom reference was thus made was Hon. Henry S. Randall, president of the National Wool-Growers' Association, whose opinion was freely expressed in a letter to the Department, which was

published in full in the monthly report above referred to. This opinion was adverse to the contemplated exchange, for the reason that no benefit to our wool interests could reasonably be expected from the introduction of Australian merinos into this country. The only State wool-growers' associations from which the Department has received a report upon the merits of the wools which were sent to them, are those of Pennsylvania and Ohio. The latter, after having submitted the samples to the examination of a committee of ten good judges of wool, passed a resolution that, in their opinion, "the fine-wool flocks of Ohio could not be benefited by introducing a cross of blood from the fine-wool flocks of New South Wales." The Pennsylvania association also submitted the Australian samples to a competent and judicious committee, whose report is given below in full. In communicating this report to the Department, the president of the association, F. Julius Le Moyne, esq., remarks that "wool-growers in the United States are not in the habit of preparing their wool for market as these Australian samples were evidently prepared—most of them having been partially scoured, soap and chemicals being used in the operation: while American wools are generally sold either in the grease or brook-washed. In view of the fact that this difference of preparation renders a comparison of foreign with American wools more difficult and uncertain, Mr. Le Moyne suggests that "a uniform manner of preparing our wools for the market is very desirable, and would save much trouble in the traffic, and give character and stability to the business."

REPORT OF THE COMMITTEE ON SAMPLES OF AUSTRALIAN WOOL.

To Dr. F. J. Le Moyne, president of The State of Pennsylvania Wool-Growers' Association:

The undersigned committee, to whom you assigned for examination samples of Australian wool received by you from the Commissioner of the Department of Agriculture at Washington City, D. C., respectfully report:

Those of the thirty-three samples offered to our inspection which have been partially scoured are much better cleansed than is customary in our State, are in very nice condition, and compare very favorably with the wools of the same class in Pennsylvania.

The scale of comparative qualities, as given in the small pamphlet accompanying the samples, (if we rightly understand it,) affords a method, if skillfully and honestly administered, of arriving at the comparative merits of fleeces of different sheep, and of varieties of breed. No such standards have been adopted in this State. The relative and comparative points are well presented in this pamphlet, embracing all the samples of wool presented for inspection.

After a careful examination, we have selected as XXX, (triple X) or pick-lock, in our mode of grading, the samples Nos. 1, 6, 8, 11, 12, and 32; and, with the exception of 32, the others are too light in fleece, falling nearly a pound in weight below the customary weight of premium fleeces in our standard flocks in the State of the same grade of wool, viz., XXX. We calculate on two and a half to three pounds of clean wool of this grade, while, with the exception of No. 32, these Australian wools fall short of that weight nearly or quite one pound to the fleece.

With repect to the samples Nos. 3, 4, 5, 7, 9, 10, 15, and 16, also Nos. 20, 21, 23, 24, 27, 29, and 30, second quality, some of which might be graded somewhat above our XX (double X) when compared with the fleeces of our "improved American merino," which produce XX wool, we are safe in saying large selections can be made from the standard flocks in our State, either clean or in the grease, which would greatly excel these Australian samples in nearly every point of comparison.

The remaining samples we would class with our single X wools, most of which would fall below the products of our American merino fleeces of that grade, more especially in weight.

Sample No. 31, French merino, is, in our opinion, the poorest in the lot. After a short experiment with this breed of sheep in this State, we abandoned them quickly, as unworthy of propagation. Their fiber is very deficient in strength, and their fleeces too light in proportion to their heavy carcasses.

The weight of the carcasses from which these Australian fleeces were shown not being given, one essential point of merit and comparison was not afforded us.

We present, from our own observation, for the consideration of those interested, the general product from ewes in the good flocks of our State, the weight of clean fleeces, and their percentage to the weight of the animal:

American Saxon merino, 65 pounds carcass, 3 pounds triple X wool, $4\frac{8}{13}$ per cent. wool.
American improved Spanish, 65 pounds carcass, 4 pounds double X wool, $6\frac{5}{13}$ per cent. wool.
American improved Spanish, 65 pounds carcass, $4\frac{1}{2}$ pounds single X wool, $6\frac{12}{13}$ per cent. wool.

After a minute and fair examination of these Australian wools, we cannot see that our Pennsylvania flocks would be benefited by crossing with the breeds which these samples represent.

The Silesian breed of sheep is larger than that of the Saxon merino, and would change but little the above percentage of triple X wool, while the Paular breed is less in size than that of the American improved Spanish; and their percentage of wool, of both double X and single X, would also be nearly the same.

There are various other breeds of sheep in the State, kept more for mutton than wool. Among these the Leicester stands highest. Their wool is long and beautiful, and is used for combing purposes. We deem it unnecessary to mention anything further of other varieties of breed.

Some samples accompany this report.

Respectfully submitted.

JOHN McDOWELL,
M. H. EWING,
JAMES G. STREAN,
WM. DAVIS,
W. LEE ARCHER,
Committee.

Mr. Le Moyne has forwarded to the Department a very fine collection of samples of wool, grown in Pennsylvania, which have been in the museum of the Department for exhibition.

Mr. Joubert, in a letter to the Department, took exception to Mr. Randall's remarks, suggesting that his opinions had been formed from erroneous impressions derived from specimens which had been brought from Australia, "under false pretenses," and intimating that he should like to have Mr. Randall's opinion of the fleeces sent to the Department. And in a subsequent letter to the Department, Mr. Joubert repeats his objections to the views expressed by Mr. Randall, and incloses an extract from the Sydney Herald, commenting, with some severity, upon Mr. Randall's views of the comparative merits of the fine wools of this country and Australia, and repeating the suggestion of Mr. Joubert that his opinion of Australian wools had been formed from "worthless culls" that had been shipped to the United States from New Zealand under false pretenses. In this connection the following communication from Mr. Randall, written after a careful examination and analysis of the samples of Australian wools forwarded by Mr. Joubert, will be read with interest by the buyers of sheep and the wool-growers of this country:

CORTLAND VILLAGE, NEW YORK, *May* 15, 1873.

SIR: I have received yours containing the letters addressed to you by Mr. Jules Joubert, secretary of the Agricultural Society of New South Wales, commenting on the opinion which I expressed, in answer to your inquiries, in regard to the expediency of introducing Australian merinos into our country by the system of exchanges proposed by Mr. Joubert. I wrote you:

"In regard to fine-wool sheep, apparently the most favorable subjects of exchange, the standards of breeding in the two countries are essentially different. A friend of mine brought out from Australia some merinos, six or eight, and placed them with me. They were from the most celebrated flocks, and were mostly first-prize sheep at the Australian International Colonial Show.* They were of good size and form, and were very hardy and vigorous. Their wool was much finer than ours, and more than proportionably lighter. Compared with ours they were a thin-wooled sheep. Their fleeces would not sell for enough more per pound than American merino fleeces to be as profitable as the latter."

Here everything that could be asked for was conceded to these Australian sheep, except in regard to their relative weight of fleeces. Because I declared them inferior to American merinos in that respect, Mr. Joubert assumes that they were "miserable specimens"

* By my own mistake, or that of the printer, this designation is improperly given. For "International Colonial Show" read "Inter-colonial Show."

of the breed brought "to the United States under false colors." I will pass this charge for the present, and let Mr. Joubert himself show the weights of fleeces of the most approved Australian merinos. Acting for the agricultural society he represents, this gentleman forwarded to the United States thirty-three merino fleeces which had received prizes at the exhibition at Sydney in 1871, "*in order*," he stated, "*to enable not only the buyers of wool, but also the breeders of sheep, to see what we produce; and with a view to bring about an exchange which must necessarily prove of mutual benefit.*" You, Mr. Commissioner of Agriculture, sent me ample samples of these specimen fleeces, accompanied by a descriptive catalogue giving average weight of each fleece in the lot from which it was taken, its time of growth, age of sheep, how bred, &c. Some of the fleeces were washed and some not. The relative weight of wool in the latter condition cannot, of course, be determined.

Of the fleeces sent by Mr. Joubert which were washed and time of growth given, there were sixteen from ewes and three from rams. The following facts appear in relation to the three heaviest ewes' fleeces:

	Weight of fleeces.	*Days' growth.*	*Age of sheep.*
Ewe	4 lbs. 4⅜ oz.	392.	4 years and upward.
Ewe	4 lbs. 1½ oz.	380.	2 years and upward.
Ewe	4 lbs. 0⅜ oz.	372.	4 years and upward.

The eight next heaviest fleeces weighed from 3 pounds 2½ ounces to 3 pounds 13⅛ ounces. Another fleece weighed 2 pounds 0⅜ ounces; and the remaining four, from 1 pound 5¼ ounces to 1 pound 9 ounces.

The following appears in relation to the three rams' fleeces:

	Weight of fleeces.	*Days' growth.*	*Age of sheep.*
Ram	5 lbs. 1½ oz.	371.	2 to 4 years.
Ram	4 lbs. 3⅜ oz.	13½ months.	13½ months.
Ram	3 lbs. 13⅜ oz.	13 months.	13 months.

The answers to the question "how bred," show that the thiry-three specimen sheep belonged to no distinct and established variety or family, known as "Australian merinos," but embraced numerous other varieties and crosses between those varieties. Thus but two are given as Australian merinos, and three as crosses between them and other varieties. Eight are given as Saxons, and they, too, have several crosses. Others are denominated "pure merinos;" "home-bred;" "colonial-bred;" "station-bred;" "originally from imported Negretti ram;" "principally from German blood;" "from merino rams for upward of twenty years;" "from pure-bred merino ewes out of imported Rambouillet stock;" "from French merino rams for upward of twenty years," &c.

Prime ewes of the improved heavy-fleeced stock known among the breeders of them as full-blood American merinos, annually produce about six pounds of washed wool per head. In breeders' ("ram-sellers") flocks, in which a rigid selection in regard to quantity of wool is practiced, such average weight sometimes reaches from seven to eight pounds' weight. It is difficult to say how much washed wool rams of corresponding quality generally produce, as the heavier-fleeced stock-rams are almost universally shorn unwashed; but their fleeces have in numerous instances been *scoured* separately, by wool-manufacturers, and have yielded from six to eight pounds, and in one instance upwards of nine pounds of *scoured* wool. The material difference in the reduction of weight made by scouring and mere washing is understood by all.

And now let us compare the relative market value, in this country, of different grades of merino wool. From 1827 to 1861, inclusive, a period of thirty-five years, the average prices of wool each quarter of the year, in Boston, one of the two leading wool-markets of the United States, was for *fine*, 50$\frac{5}{10}$ cents, and for *medium*, 42$\frac{7}{10}$ cents per pound; the former averaging but 15 per centum higher than the latter: and this average difference has decreased instead of increasing during the period which has since elapsed. The wools classed as fine "included Saxon, grade Saxon, and choice lightish-fleece American merino; the medium included American merino and grade down, say to half-blood."* The first

* The table of relative prices above referred to (and it also included coarse wools) was prepared at my request by George Livermore, esq., an eminent wool-merchant and statistician of Boston, who compiled it from his own books and those of his predecessors in the firm. I published it in "Fine-Wool Husbandry," and subsequently in "The Practical Shepherd;" and it has been repeatedly published elsewhere, without its accuracy ever having been called in question. The above classification or specification, by blood, of the sheep producing, respectively, the wool designated as "fine" and "medium," was given by me in both the above-named works, and equally, I believe, without challenge.

about corresponded with Australian fine wools. The heavy American merino wool all falls into the second or medium class; but the grower of it, with only 15 per cent against him in average selling price, and with more than 100 per cent. in his favor, according to Mr. Joubert's showing, in average weight of fleece,* will, it is obvious, find the production of his heavy wools far the most profitable. Indeed, in our principal older wool-growing northern and eastern States, where the sheep-lands are generally worth at least $30 or $40 an acre, where the sheep require a full supply of artificial feed during at least five months of the year, fleeces of the weight of those sent by Mr. Joubert, no matter how high their quality, would not pay the actual cost of growing them. This fact has been fully established by experience. Many Saxon sheep of like type were imported into this country between 1824 and 1828, and various choice lots of them and other light-fleeced merino stocks have been introduced since. But at length sheep of this stamp have been almost wholly discarded by American wool-growers. Even our "Washington County wools,"† formerly rivaling the Australian wools in fineness and excelling them in soundness and in uniformity, have, after a long struggle, mostly given way to heavier fleeces produced by a cross with heavier-wooled stocks. The opening of cheap lands and perennial pasturage to sheep-husbandry in some of our new States, and future circumstances more propitious than existing ones to the extension of our fine-wool manufactures, may ultimately render the growing of fine merino wools profitable; but the attainment of this highly desirable result depends upon so many contingencies, and is liable to be so long delayed, that it would be the height of folly in our breeders to take preparatory steps in that direction at present.

While the foregoing facts show, beyond all question, that the American is the most profitable merino for the United States, it is not by any means claimed that they show it would be the most profitable variety for Australia. The circumstances which regulate the wool-markets of the two countries are essentially different. Our wools are grown exclusively to meet the demand of a home market, where both the consumption and the manufacture of medium merino wools are vastly in excess of the consumption and manufacture of fine wools. Australia grows wool entirely for export. She undoubtedly finds a larger and more remunerative market for fine wools, or her intelligent and experienced growers would not continue to give their production the preference. Every practical breeder knows that the maximum of weight and the maximum of fineness in wool cannot be attained, or even approximately attained, in the same fleeces; and hence to say, as I did, of the Australian merinos, that, "compared with ours, they were a thin-wooled sheep," coupled with the declaration that "their wool was much finer than ours," was no real or intended disparagement of them.

Here I would choose to close this letter, but justice to the gentleman who imported the Australian sheep described by me compels me to notice the imputations made on him in Mr. Joubert's letter to you, and by a writer in the Sydney Morning Herald, whose article Mr. Joubert forwarded. The history of that importation is briefly as follows: Mr. Charles J. Kenworthy, an American medical gentleman who had resided a number of years in Australia, wrote me from Ballarat, Victoria, early in 1864, that he was about to return to the United States, and should bring with him some Australian merinos. He was sanguine that, with their previous habits, these sheep could subsist in great numbers, and all the year round, on the "piny barrens of the Southern States," and thus utilize, with great profits, an immense region then and now entirely unproductive and almost totally valueless; and he was determined to commence the experiment on a small scale. On his arrival in this country he, by my permission, brought the sheep to my farm until he could make other arrangements. He informed me that he obtained them in Victoria from Thomas Learmouth, J. L. Currie, and T. Shaw, jr., breeders of high standing in that province, winners of prizes on sheep at the Melbourne exhibitions, and (in 1865) on wool exhibited at Melbourne, and London, England. Dr. Kenworthy showed me letters from two at least of the above gentlemen, couched rather in the language of friendly regard than of business, mentioning the sheep they had carefully selected for him, declining any compensation for them, and expressing kindly wishes for the success of his "experiment." The doctor's return was during the din of civil war and when the pine-barrens of the South were no places to try experiments in sheep-husbandry. Subsequently, for reasons which do not require explanation here, he gave up the undertaking. He never sold or offered for sale one of the sheep, never called or desired me to call public attention to them. And, before dropping the subject, I will add that I have no doubt they were very choice specimens of Australian-bred merinos. The imported ewes annually sheared from 3½

* Wool is usually washed cleaner for market in Australia than in the United States, but the difference is not sufficient materially to affect the above estimate.

† They took their name from Washington County, Pennsylvania, and were grown in the southwest counties of that State, the Pan-Handle of West Virginia, and the adjacent portions of Ohio.

pounds to 4 pounds of washed wool per head; the imported ram about 5½ pounds; and among the numerous choice specimens of wool, including Mr. Joubert's, from noted Australian flocks, which I have seen within the last ten or fifteen years, I have seen none, in my opinion, of superior quality from fleeces of equal weight.

I am, sir, very truly, yours,

HENRY S. RANDALL.

Hon. FREDERICK WATTS,
Commissioner of Agriculture.

EUROPEAN STATISTICS.

STATISTICS OF AGRICULTURE IN SWEDEN AND NORWAY.

The following facts relating to agriculture and commerce in Sweden and Norway are condensed from communications made to the Department of State by Mr. C. C. Andrews, United States minister to Sweden, chiefly from official reports:

AGRICULTURE IN SWEDEN.—The surface of Sweden, as a whole, slopes gradually from the Baltic to the mountain range which separates it from Norway. The larger part is what is called low ground, which is intersected by numerous granite ridges from 40 to 50 feet high. It abounds in lakes, streams, and forests. Of the latter some are of massive fir, some of stately oak and other hard-wood varieties, and some on rocky tracts are of scanty growth. By the co-operation of the government and private enterprise, Sweden has developed a well-organized agricultural system. The Royal Academy of Agriculture, established at Stockholm, has connected with it an experimental farm, and devotes itself chiefly to the solving of scientific questions involved in agricultural industries. There are two agricultural institutes of a high grade—Alnarp, near Luna, and Ultuna, near Upsala—which have fine farms and are well endowed. A few graduates from these are sent annually, at the public expense, to spend a year in studying the theory and practice of agriculture in Scotland, it being thought that Scotland, in its agricultural features, resembles Sweden more than any other country does. In addition to these three institutions, national in their scope, each län, or county, has an agricultural economic society, of which the county governor (appointed by the Crown) is usually president. These county societies draw a considerable revenue from a brandy-tax imposed by the government, and hence, though voluntary organizations, they are indirectly brought under obligations to collect statistics for governmental purposes. They have the means of distributing premiums, and as they generally include the most intelligent and public-spirited men in the county, they promote agricultural interests in many ways. Statistical blanks are annually forwarded by the central bureau of statistics to each of these societies, which is expected to see that they are filled out and returned by all the farmers within its limits. In this work the society is assisted by the parish administrations, and such other agencies as are available. As soon as the returns from any one county are received by the statistical bureau, they are printed and distributed over the kingdom. But, though it often happens that the statistics of a county are returned in printed form and distributed through it (and the country) within six weeks from the time they were forwarded, the annual report of agriculture for the whole kingdom is seldom published before the statistics are two years old.

In Sweden much of the land has never been surveyed, and therefore the following statistics are, in some respects, but an approximation to exactness. The report of 1868 gives as the whole area, main-land and islands, 97,051,107 imperial acres. Of this there were in vegetable, hop, and market gardens, 52,684 acres; arable and other land under cultivation, 6,023,448; natural meadows, 4,910,296; forest-bearing land, 49,784,515; mineral and waste lands, 36,280,164. For the three years preceding 1868 the amount of land under cultivation was annually increased, on the average, about 2.25 per cent. The increase in acreage of improved and cultivated land, in 1865, was as follows: Newly cultivated land, 28,661 acres; drained, 10,676; underdrained, 34,725; irrigated, 3,245; marled, 32,678; forest-sowed, 6,008; forest-planted, 2,458; total, 118,451 acres. In 1869 the area in wheat and rye was 951,600 acres; in barley and oats, 1,830,000; buckwheat, 1,220. The product of wheat was 2,200,000 imperial bushels; rye, 14,400,000; barley, 10,400,000; oats, 26,400,000; buckwheat, 20,000; pease and beans, 1,600,000; potatoes, 40,000,000. The exports of cereals were: Wheat and flour, 455,080 imperial bushels; rye, 31,560; barley and malt, 906,160; oats, 7,114,896. The imports of cereals were: Wheat and flour, 900,040 imperial bushels; rye flour or meal, 3,571,692; barley and malt, 227,360.

Farms and their occupants.—In 1868 the number of farmers owning farms of 5 acres or less was 63,181; of over 5 to 50 acres, 153,379; of over 50 to 250 acres, 22,744; of over 250 acres, 2,588; total number of owners, 241,892. The number of tenants and proprietors cultivating farms of 5 acres or less was 91,858; of over 5 to 50 acres, 98,665; of over 50 to 250 acres, 13,390; of over 250 acres, 1,648; total number of tenants and proprietors cultivating farms, 205,561. Of farms which maintain entirely the family cultivating them, the smallest consist of about 40 acres of arable and meadow land, with 50 to 100 acres of pasture and wood land. The occupants of smaller farms generally support their families, in part, from other resources than farming. The class known in Sweden as "the peasantry" own the land they cultivate. There is a large class called "torpars," (that is, cottagers,) who occupy "torps" and pay the rent in labor. A torp usually includes, beside a a cottage, not over 4 acres of arable land, with the right of fuel and of pasture for a number of cattle. The rent varies from one to three days' work per week, to which must be added a certain number of days' work in harvest by women; for, in Sweden, women work on the farm in planting, hoeing, and harvesting. In 1867 the number of torps in the kingdom was 179,034. The average money-rent of land of medium quality is, for small farms, about $4.25 per tunnland, a tunnland being 1.22 imperial acres; for large farms, $2.50 to $3.25 per tunnland. Leases are usually for ten years, but the Crown-lands may be leased for twenty years.

Wages.—Money-wages vary according to season and locality. In winter, for men working nine hours per day, day-wages range from 16 to 27 cents; in summer, for men working thirteen hours per day, they range from 21 to 41 cents; for women, in summer, day-wages are from 10 to 22 cents. Yearly wages, including board, are, for men, from $20 to $30; for girls, from $10 to $14. The value of a year's board for a hired man is estimated at from $45 to $70. Of late years land has been increasing in value, and, as it does so, the torpar system is found less economical; hence there is a growing practice of employing married laborers who reside on the farm and are paid partly in money and partly in farm products. Generally married hired laborers have a cottage and a plat of land rent free.

Improvement in draining.—Drainage is made a specialty in Sweden, and it is estimated that the increase in value of land thus improved has already added over $100,000,000 to the permanent wealth of the kingdom. Any farmer who wishes to drain land can have the services of a skillful engineer, at small expense, by applying through the proper official channel. The incomplete statistics of 1867 returned for that year 9,756 acres of overflowed land as drained, and 11,744 acres of other land as underdrained. In the same line of improvement, subsoil plows, plowing to the depth of 12 or 15 inches, are being introduced, and the use of them promises to soon become general.

Fertilizers.—The use of guano and Chilian saltpeter has almost ceased in Sweden; the use of phosphates is increasing—applied mostly to root-crops and rye; seldom to grass. Beside the importation of artificial fertilizers in considerable quantities, there are in the country numerous establishments for manufacturing them.

Variety of products.—In the northern provinces, next to grass, barley and potatoes are the principal crops; rye, oats, and turnips are raised on a smaller scale. Fruit will not ripen. In the central provinces, in addition to the above-named products, wheat, peas, vetches, and beets are produced, and apples, pears, plums, and cherries ripen. The southern provinces and islands enlarge the catalogue still further by adding to it rape, carrots, walnuts, and grapes.

Rotation of crops.—In the northern provinces it is still the prevailing practice to raise grain on the same soil every year. A two-course system—bare fallow on one-half the arable land, and grain or (to a less extent) root-crops on the other half—is in use in the provinces around Lake Mälar. A three-course system—one-third of the arable land in fallow, one-third in wheat and rye, and one-third in spring-crops—prevails in the southern provinces. But throughout the country the laws by which rotation in crops should be governed are becoming better understood, and changes in favor of conformity to them are gradually taking place. In the southern portions there is now in practice a six to ten years' course. It is modified more or less by the varying nature of the soil and the varying judgments and tastes of individual farmers, but the following are specimens. On a mild clay soil: first year, fallow; second, wheat or rye; third, fourth, and fifth, clover and grass; sixth, oats; seventh, potatoes; eighth, barley; ninth, clover or vetches for green fodder; tenth, wheat. On a stiffer clay soil: first year, fallow; second, rye; third, clover; fourth, wheat; fifth, vetches or peas; sixth, barley; seventh, oats. On light land: first year, fallow; second, rye; third, roots; fourth, barley; fifth and sixth, grass; seventh, oats. On sandy soil: first year, root crop; second, barley or oats; third and fourth, white clover or grass for pasture; fifth, rye.

Yield.—The yield per tunnland (1.22 acres) averages: wheat and rape, each 40 bushels, and 4,000 pounds of straw; rye, 40 bushels, and 5,000 pounds of straw; barley, 40 bushels, and 2,500 pounds of straw; peas, 30 bushels, and 2,000 pounds of straw; vetches, 40 bushels, and 3,000 pounds of straw; oats, 50 bushels, and 3,000 pounds of straw; beans, 50 bushels, and 2,000 pounds of straw; potatoes, 500 bushels; turnips, 1,000 bushels; beets, 750 bushels; white clover, 3,000 pounds of hay; red clover, Swedish clover, and timothy, each 6,000 pounds of hay.

COMMERCE BETWEEN THE UNITED STATES AND SWEDEN.

The following tables will show the variations of commerce between the United States and Sweden during the years indicated. A Swedish skalpund is a small fraction less than a pound avordupois, 1.067 skalpunds being equal to 1 pound; and a Swedish centner equals 100 skalpunds, or 93.7 pounds.

Imports into Sweden from the United States.

Articles.	1865.	1866.	1867.	1868.	1869.
Cotton ..... skalpunds..	.....	350,000	319,131	553,270	.....
Dye-wood ..... centners..	642	8,036	2,100	.....	.....
Coffee ..... skalpunds..	329,080	353	490	.....	687,580
Mineral oil, raw ..... do....	.....	1,004,605	441,750	.....	642,275
Mineral oil, rectified ..... do....	57,970	346,313	428,380	1,161,727	2,236,901
Tobacco leaves ..... do....	320,035	78,907	161,984	199,626	41,551
Tobacco stalks ..... do....	156,554	117,767	13,055	9,007	22,545
White lead ..... do....	.....	.....	.....	.....	1,710

Exports from Sweden to the United States.

Bar-iron ..... centners..	141,375	340,815	584,088	432,578	529,907
Bolt, tool, and rod iron ..... do....	.....	5,592	3,832	2,777	5,223

In 1869 there were also exported to the United States 2,524 centners of cast-steel; 1,198 centners of iron plates; 13,933 centners of scrap iron; 38,528 centners of manufactured iron; also some small lots of lumber.

The total value of exports from Sweden to the United States, in 1869, was $14,630,000—greater than in any previous year except 1867. But while exports to the United States were increasing, with a fair prospect of continuing to do so, exports to Sweden from this country were diminishing; the value of goods imported from the United States in 1860 was $24,631,600, and in 1861 it was nearly the same; but in 1869 it had fallen to $2,120,400. The import of cotton from the United States was wholly superseded in 1869, and principally by imports from London of cotton the main part of which was not produced in this country. It will be seen, from the above table, that the import of tobacco leaves and stalks from the United States was also gradually diminishing; but the import of petroleum produced here was somewhat rapidly increasing.

AGRICULTURE IN NORWAY.—The area under cereals, and the product of cereals and potatoes in Norway, for the years 1865 and 1870, were:

	1865.	1870.
Wheat ..... acres..	43,750	*45,000
Barley and oats ..... do....	360,250	375,000
Mixed grain ..... do....	48,750	50,000
Wheat ..... imperial bushels..	271,384	*40,000
Rye ..... do.....	651,390	764,000
Barley ..... do.....	3,415,546	3,820,000
Oats ..... do.....	7,881,359	8,404,000
Pease and beans ..... do.....	186,561	289,200
Barley and oats, (half and half) ..... do.....	1,741,213	1,910,000
Potatoes ..... do.....	18,035,358	21,010,000

* Estimated.

The principal exports and imports of cereals, for the years 1866 to 1870, inclusive, were:

EXPORTS.

	1866.	1867.	1868.	1869.	1870.
Oats ..... bushels.	279,795	499,090	161,543	180,338	3,056,000
Barley and malt .do..	145	672	2,320	1,149	.....

IMPORTS.

Wheat .... bushels..	148,054	142,539	154,889	155,626	152,800
Flour.....do....	85,002	72,767	93,768	105,160	114,600
Rye .....do....	3,533,717	2,736,648	375,211	3,975,997	4,202,000
Rye-flour and meal .... bushels..	374,405	330,506	359,316	318,614	382,000
Barley and malt .do..	1,763,873	1,537,083	2,317,842	2,214,877	2,101,000

The value of the principal imports into Norway, in 1869, was as follows: Animal food, 1,050,000 specie dollars; cereals, $7,384,000; coffee, $1,203,000; sugar, sirup, and honey, $1,119,000; brandies and spirits, $280,000; tobacco, $529,000; dry-goods, $2,616,000; hides and skins, $518,000; coal, $749,000; salt, $577,000. The value of the principal exports for the same year: fish, (dried, klip, fresh herrings, &c.,) 7,155,000 specie dollars; skins and spawn, $855,000; cod-liver oil, $1,183,000; lumber, $6,629,000; ice, $105,000; sulphurous ores, $232,000; metals, $293,000; oats, $94,000.

The commerce of Norway with the United States appears to be on the increase. In 1868 the number of Norwegian vessels arriving in the harbors of the United States was 170, of which the aggregate tonnage was 71,576; in 1869 the number was 372, and the tonnage 148,126. In the former year the number of Norwegian vessels departing from harbors of the United States was 180, of 74,428 tons; in the latter year, 347, of 139,415 tons.

GERMAN EXPORTS TO THE UNITED STATES.

The statements below, relating to the commerce of this country with certain districts in the German Empire, are gathered from reports made to the Department of State by Mr. R. S. Kendall, United States consul at Strasburg, and by Mr. E. Klamprecht, United States consul at Stuttgart:

EXPORTS FROM STRASBURG AND MÜLHAUSEN—There was, in 1871, a very large increase of exports to the United States from the consular district of Strasburg and Mülhausen, and that notwithstanding the great drawback to its manufactures, occasioned by siege and other ravages of war. But it is not probable that there was any real increase in the importation of articles manufactured in the district into the United States. Previous to the Franco-Prussian war large quantities of goods manufactured in Strasburg and its vicinity were exported to this country from Paris or some other commercial center in Western France. Many mercantile houses in Paris were connected with manufacturing establishments at Strasburg, from which they first transported manufactures to Paris, and then exported them to the United States simply as French

products. But during the war all goods manufactured at and near Strasburg, and destined for this country, had to be exported directly. Silk head-nets, which stand third in amount of value on the list of exports from that district to the United States in 1871, have always been manufactured almost exclusively in Alsace; and yet there had been no direct export of them to this country previous to January, 1871, but they had been conveyed in bulk from the place of production to Paris, where they were assorted, put up in fancy boxes, and thence shipped. The same was true in part with respect to most, if not all, articles produced in Alsace-Lorain and imported into the United States. Since the restoration of order and the re-opening of old avenues of transportation through France, direct exports from Strasburg to the United States are again diminishing, and may yet settle down to what they were before the war, though it is not yet safe to predict what effect the cession of that territory to Prussia is to have upon its manufacturing and commercial interests and relations. Many of its manufacturers, because of old business connections or of political preference, seem now disposed to transfer their business to French territory.

The following table exhibits the several kinds and values of exports from the consular district of Strasburg and Mülhausen to the United States for the year ending September 30, 1871:

Articles.	Value, francs.	Articles.	Value, francs.
From Strasburg.		Books	825. 80
		Dyestuffs	961. 75
Leather	2, 645, 800. 70	Sundries	2, 032. 30
Silk head-nets	786, 139. 85		
Glassware	532, 522. 50	Total	5, 270, 900. 35
Cotton and woolen goods	524, 873. 76		
Gloves	224, 162. 50		
Plush	193, 150. 80	*From Mülhausen.*	
Garancine	81, 673. 40		
Satins and velvets	75, 106. 75	Printed tissues	1, 651. 897. 40
Watch-glasses	58, 227. 90	Cotton and woolen goods	652, 753. 00
Silk ribbons	54, 986. 80	Silk ribbons	445, 282. 90
Muslin	22, 914. 90	Chemical products	106, 601. 40
Wine	21, 053. 70	Paper-hangings	47, 760 35
Effervescing powder	10, 325. 90	Cotton twist	22, 811. 60
Cloth	8, 955. 05	Photographic materials	20, 570. 00
Morocco leather	6, 562. 60	Cotton tissue	13, 880. 45
Vinegar	4, 738. 00	Machinery	10, 410. 00
Goose-livers	3, 340. 00	Silk tissue	68, 118. 40
Watch-springs	2, 488. 00	Sundries	7, 870. 50
Hardware	2, 291. 70		
Watch-keys	2, 223. 00	Total	3, 047, 956. 00
Varnish	2, 108. 26	Total from Strasburg added	5, 270, 900. 35
Brandy	1, 934. 50		
Handkerchiefs	1, 500. 00	Total for the district	8, 318, 856. 35

EXPORTS FROM THE KINGDOM OF WÜRTEMBERG.—For the year ending September 30, 1871, the exports to the United States from the consular district of Stuttgart, Würtemberg, were as follows:

Articles.	Value in florins and kreutzers.	Articles.	Value in florins and kreutzers.
	Fl. Kr.		*Fl. Kr.*
Corsets	2, 589, 333 30	Dried fruit	199, 174 31
Wine	101, 429 22	Jewelry	72, 290 54
Drugs	34, 181 15	Metal ware	8, 316 44½
Cotton goods	91, 119 21	Toys	3, 042 40
Woolen goods	5, 622 15	Colors	157, 259 24½
Linen goods	1, 528 28	Sundries	184, 922 21
Mixed goods	6, 193 22		
Books	28, 373 35	Total value	3, 775, 226 24
Leather	292, 438 41		

A florin is about 40 cents, and a kreutzer two-thirds of one cent, or one-sixtieth of a florin. These exports to the United States exceed in value those of any previous year. The several values indicate an increase in every article exported over that of the preceding year; of leather, by 222,598.10 florins; of corsets, by 214,262.32 florins; of cotton goods, by 43,187.35 florins; and of colors, by 57,665.42 florins. On account of the cheapness of female labor in the rural districts, corsets and embroidered cotton goods are manufactured at a cost which defies competition. It is stated that in the upper rural districts 8,146 persons are employed in embroidering, at from 12 to 16 cents per day. Embroidering is done by machinery as well as by hand, and in the district of Ravensburg machines with two hundred and sixteen needles are severally worked by three hands, with a productive power equal to that of 25 hands. Under the head of leather, in the above list, kid-gloves are represented by a value of 64,142.36 florins. The manufacture of these for exportation is rapidly increasing. Those manufactured at Esslingen (from which city alone, in Würtemberg, they are exported to the United States) are beginning to compete with the kid gloves of Vienna. The increase in the export of colors to this country over the preceding year is represented by 57,665.42 florins. This branch of chemical industry, the production and improvement of colors, (aniline, tar-colors,) is reported as making rapid strides and yielding immense profits. The great increase in the export of leather, and doubtless of some other articles, is to be accounted for, in part, by the fact that previous to the Franco-Prussian war, leather manufactured at Ulm and Reutlingen was first transported to Paris and shipped thence to this country as a French manufacture.

Wealth of Würtemberg.—In a statistical report, Doctor Rumelin, president of the statistical bureau of Würtemberg, reaches the conclusion that the private property in the kingdom averages 6,300 florins ($2,520) for every family, and 1,337 florins ($533) for every individual in it. This conclusion is deduced from the following facts and estimates, represented by figures in round numbers: The kingdom contains—2,731,816 acres of fields; average value per acre, 210 florins; total, 573,000,000 florins; 881,607 acres of meadows, 315 florins, 275,600,000; 121,504 acres of gardens, 420 florins, 51,000,000; 79,964 acres of vineyards, average value per acre, 500 florins; total, 40,000,000 florins; 228,931 acres of pasture-ground, 60 florins, 13,700,000 florins; 1,880,425 acres of woodland, 120 florins, 225,600,000 florins; mining lands, value, 35,000,000 florins; 422,990 buildings, 640,000,000 florins; railroads, 120,000,000 florins; personal and movable property, 700,000,000 florins; capital rents, 400,000,000 florins; total, 3,074,000,000 florins. Deducting 774,500,000 florins for the property owned by the state, townships, and corporations, in saline-works, forests, &c., and estimating the number of families at 365,000, there would be left 6,300 for each family. The average amount for each individual in the kingdom appears to have been found by dividing the total of private property by the number of inhabitants, which is not given.

The same statistician estimates the annual income of the people at 276,000,000 florins, averaging for each family (not reckoning interest on dwellings) 756 florins, ($302.40,) and for each person 160 florins, ($64.) The parts of this income are represented in values and percentage, as derived from the following sources: *From rural industries*, 126,000,000 florins, being 45.9 per cent. of the whole; of which 111,500,000 florins, 40.5 per cent., are from agriculture and cattle-raising; 6,000,000 florins,

2.2 per cent., from wine culture; 4,500,000 florins, 1.6 per cent., from fruit, and 4,500,000 florins, 1.6 per cent., from horticulture. *From products of forests*, 10,000,000 florins, 3.6 per cent. *From mines and peat-beds*, 3,500,000 florins, 1.2 per cent. *From increase in the value of raw materials*, by manufacturing, 120,000,000, 43.5 per cent.; by domestic trade, 6,000,000 florins, 2.2 per cent.; by railroads and mails, 5,000,000 florins, 1.8 per cent.; and *from rents of capitals*, 5,000,000 florins, 1.8 per cent.; total, 276,000,000 florins.

It will be seen from the above that nearly 90 per cent. of the annual production of the people is derived from rural and manufacturing industries, and that the laboring force of the country is pretty nearly equally divided between these two: that is, on the assumption that the average profit is the same with the two classes. Considering those engaged in agriculture as producers, and those in manufactures as consumers of their products, this is probably the best division that could be to promote the interests of the two classes and the steady prosperity of the whole kingdom.

THE COLONY OF VICTORIA.

Mr. T. Adamson, jr., United States consul at Victoria, furnishes information concerning the agriculture of that British colony, situated in the southeastern portion of Australia. It occupies an arrear of 80,944 square miles, being about the size of the State of Minnesota. The following particulars respecting its agricultural and commercial condition, resources, and prospects, are gathered from a report for the year ending November 18, 1871, and are to be understood as not referring to a later date except when so specified. The population now numbers 729,654; among whom there are 70,960 more males than females; 17,770 Chinamen, 43 Chinese females, and 879 aborigines. In 1851, the year in which gold was discovered in the colony, the number of inhabitants was only 77,245. Immigration has been stimulated not only by the allurements of gold, but by a provision of the government through which resident immigrants could procure for relatives and friends desirous of following them, passes, in some instances free, and in others at greatly reduced rates; it being thought that this would both promote the re-union of families and secure a better class of immigrants. Of late free passes have been furnished only to unmarried young women, and a growing opposition to State appropriations for immigrant passage-money has for several years occasioned an annual diminution in the amount, and is likely to soon put an end to them.

Of the total area, 55,644,160 acres, 11,497,066 acres have been alienated from the Crown by sale or appropriation for roads and other public purposes, and 27,370,340 acres are rented until wanted for settlement, under "pastoral licenses" from the Crown, at an aggregate annual rental of £168,000. In 1869 a law was passed which, under certain conditions, gives the right of "free selection" of land before it is surveyed, in all parts of the territory not yet appropriated. For land thus selected or "located," the annual rent is two shillings per acre; but this is allowed as a part of the purchase-money in case the renter buys the selected lot; and he gains a title in fee-simple at the end of five years from the time of selecting, provided he complies with certain conditions relating to residence, improvements, &c. Just what those conditions are, and how large a quantity he is permitted to "select," we are not informed. As might be anticipated, the policy which confers the right of free selection and incipient title, and that by which stock and wool-growers hold lands

"until wanted for settlement" under pastoral licenses from the Crown, do not work harmoniously. The latter class complain bitterly that the right of free selection subjects them to a constant liability to be interrupted in their business and to have their improvements taken from them without compensation.

Agriculture and related industries.—It is claimed that the colony has varieties of climate and soil adopted to all agricultural productions which will grow within the range of climate limited on the north by England, and on the south by Italy. It now produces cereals sufficient for its own demands, though occasional shipments of breadstuffs find their way into it from California and from the adjacent colonies. The climate seems poorly adapted to the growing of maize, and yet it is extensively grown for fodder. Of vegetables, fruit, dairy products, poultry, eggs, &c., the production is fully equal to the demand. In some years potatoes have been produced in such quantities that many have been left to rot because it would not pay to transport them to Melbourne. During the greater part of the year butter sells by the quantity, at 8 to 13 cents per pound. Experiments in shipping it to London, not yet abandoned, have not hitherto resulted very favorably, the apparent ground of failure being a want of adequate intelligence and care in making and packing it—a heavy drawback upon the price of butter in the market, by no means confined to that made in Victoria. It may be owing to a like cause that a few cheese factories started in the colony on the American plan have not thus far been remunerative. The cultivation of sugar-beets has been introduced, and some companies have been formed for the manufacture of sugar and spirits from them; whether the colony can command, at present, sufficient skill and enterprise to insure success in this branch of industry, is yet to be determined. Another industry yet in its infancy is the production of wine. The grape attains great perfection here, and it would seem that intelligence, guided by experience, in the art of making wine, is all that is wanting to make Victoria a great wine producing country. Some incipient steps have been taken in silk culture; but it is thought that a lack of cheap labor must be an insuperable obstacle to success in that business, at least for some years to come. Attention has also been turned toward the culture of the olive for both the home and foreign markets. Among the conditions which favor the production of stock, wool, meats, butter, and cheese are abundant yields of grass and feed. Foreign grasses thrive well. Lucern, Italian rye-grass, and some other varieties of green food for cattle are said to grow with astonishing luxuriance. Wool has lately been selling at so low a rate that many who, in more prosperous times, invested in flocks have been bankrupted; but quite recently heavy advances in the price of wool have revived confidence and the business of sheep husbandry is growing in favor. The arrival of American wool-buyers has largely contributed to this result, and it is hoped that their presence may lead to an increase of trade with the United States in other commodities. During the month preceding November 18, 1871, more wool was shipped from Melbourne to the United States than in the preceding two years. In the return of exports from Melbourne, for 1870, are specified 52,123,451 pounds of wool, (value $15,512,713, averaging 29¾ cents per pound;) 14,137 head of cattle, ($199,616, averaging $14.12 per head,) and 13,167 hides, ($55,699;) but these are not all products of Victoria, a considerable portion of them having been brought to Melbourne for market or shipment from adjacent colonies.

Manufactures.—Hitherto the great drawback upon agricultural prosperity in the colony has been the want of a home market. Foreign markets are so distant that the cost of transportation more than absorbs all profits on most agricultural products, to say nothing about the impossibility of transporting to a distant market many varieties of vegetables and fruits, (among the most remunerative of farm and garden products when there is a near market,) because of their speedily depreciating or decaying nature. With a view to advance the interests of agriculture by creating a home market, a protective policy was adopted in 1866, the principle of which has recently been extended by an increase of duties on manufactured articles. What the ultimate effect is to be on the prosperity of the colony as a whole is yet to be determined; but, in connection with it, several new industries are springing up, and home manufactures are on the increase. There is now one large woolen-factory in full operation, and two others are likely to be started soon. The principal woolen goods produced thus far are blankets and tweeds. Clothing is manufactured on an extensive scale. Among other nascent manufacturing industries may be mentioned several boot and shoe factories, one paper-mill, and a number of small establishments for manufacturing casks, furniture, coaches, harnesses, whips, leather, &c. The bark of the "whattle tree" is found to be very valuable for tanning leather, and for that purpose hundreds of tons are annually exported. Among the most important and extensive agencies for opening new channels to market for agricultural products are meat-preserving companies. Some idea of the extent of this business may be gained from the fact that one company, within the space of six months, put up the meat of over 9,000 oxen, and about 1,000,000 sheep. The cheapness of live-stock affords special encouragement to this business.

Mining.—The mining of gold is now principally carried on by companies, and from quartz mines, the alluvials having been nearly exhausted. In favorably located mines three pennyweights of gold per ton of quartz pays all expenses, and six pennyweights per ton yields a fortune. The amount of gold mined in Victoria and exported, from January 1 to November 11, 1871, was 1,287,702 ounces, being 169,331 ounces in excess of the amount exported during the corresponding period in 1870. Silver, tin, and antimony are found in the colony in paying quantities. Coal beds have been discovered, but their extent is not yet determined, and, owing to a lack of transporting facilities, they have been worked, as yet, only on a limited scale.

Commerce.—From January 1 to October 28, 1871, the total value of exports was $50,421,276; of imports, $47,382,385. This, compared with the corresponding period in 1870, was an increase in the value of exports of $6,609,068, and a decrease in the value of imports of $2,860,556. These opposite results are thought to be in accordance with the future tendencies of trade in the colony; that is, by a steady increase in the variety and amount of its agricultural and manufactured products, it is to supply more and more its home market, and produce more and more for foreign markets. But there are some important articles for which, if the population increases, there must be an increasing demand, and which must be mainly imported, at least for years to come. Besides various kinds of finer goods, which the colony has now no skilled artisans, and no facilities for manufacturing, there are several articles, necessarily imported, in which the commerce of the United States is

chiefly interested, such as lumber, (there being no soft wood grown in the colony,) tobacco, and the products of petroleum.

There are in Victoria nearly two hundred telegraphic stations, from each of which a message not exceeding ten words (exclusive of the address) can be sent for one shilling, and one penny for each additional word; press-messages for half price. The colony, in addition to its internal telegraphic system, has telegraphic connections with New South Wales, Queensland, South Australia, and by submarine cable with Tasmania, (Van Diemen's Land;) and expects soon to be in direct telegraphic communication with England and the United States. From Sidney, New South Wales, to England, the distance is estimated at 10,665 miles via Brindisi and Suez; and at 13,362 miles via Fiji, Honolulu, San Francisco, and New York.

BRITISH IMPORTS.

WHEAT.—The total of wheat imported by Great Britain, in the first four months of 1873, was 12,296,089 cwts., being an increase of 1,265,889 cwts. over the imports of the corresponding months of 1872. Russia, which was so largely in advance last year, takes the second rank, and the United States stand first, though the receipts from the former in the first four months of 1872 were three times the quantity received from this country. Of these imports, 4,279,829 cwts. were from the United States, against 1,891,316 in the corresponding period in 1872; 4,002,870 from Russia, against 6,592,426 in 1872; 874,818 from Germany, against 775,725 in 1872; 1,062,199 from France, against 59,792 in 1872; from Denmark, 204,122; from Egypt, 524,975; from Chili, 402,374; from British North America, 19,025; and from other places, 827,783 cwts. The average cost, in 1873, was 12*s.* 10*d.*, per cwt.; the cost of that from the United States was 13*s.* 4*d.*; from Russia, 12*s.* 4*d.*; from Germany, 13*s.* 11½*d.*; from France, 12*s.* 9*d.*; and from British North America, 14*s.* 9*d.*

FLOUR.—The total of wheat, meal, and flour was 2,453,008 cwts., being an increase of 1,550,208 over the import in 1872; of which 280,731 cwts. were from the United States, against 181,265 in 1872; 1,244,232 from France, against 114,010 in 1872; 7,368 from British North America, against 930 in 1872. The average cost was 19 shillings per cwt.; cost of that from the United States, 17*s.* 11½*d.*; from France, 19*s.*; from British North America, 18*s.* 7½*d.*; from other countries, 19*s.* 2*d.*

INDIAN CORN AND MEAL.—The import of Indian corn was 4,605,396 cwts., being 449,273 less than in 1872; cost 6*s.* 9*d.*; Indian-corn meal, 1,249 cwts., a decrease of 572 from 1872; cost £2 2*s.* 3½*d.*

COTTON.—The total of raw cotton was 5,498,346 cwts., 271,447 less than in 1872: from the United States, 3,529,867 cwts., against 2,989,888 in 1872; from British India, 812,821, against 1,435,602 in 1872; from Brazil, 183,340, against 450,352 in 1872; from Egypt, 814,268, against 770,722 in 1872; and from Turkey, 33,656, against 31,301 in 1872. The average cost was £4 6*s.* 10½*d.* per cwt.; cost of that from the United States £4 10*s.* 0¾*d*; from British India, £3 2*s.* 4*d.*; from Brazil, £4 11*s.* 3*d.*; from Egypt, £4 17*s.* 4½*d.*; from Turkey, £4 17*s.* 1*d.*

EXTENT OF CROPS IN GREAT BRITAIN.—The following table exhibits the number of acres in Great Britain under each crop named, and the total under all crops, for the years 1871 and 1872:

	England.		Wales.	
	1871.	1872.	1871.	1872.
Wheat	3,312,550	3,336,888	126,334	126,367
Barley or bere	1,964,210	1,896,403	169,751	168,014
Oats	1,454,144	1,442,075	253,672	256,074
Rye	57,755	52,441	2,338	2,328
Beans	512,929	496,158	4,071	3,312
Pease	382,104	352,733	4,534	5,821
Total under corn-crops	7,683,692	7,576,698	560,700	561,916
Under all crops	23,717,660	23,830,197	2,604,817	2,635,642

	Scotland.		Total for Great Britain.	
	1871.	1872.	1871.	1872.
Wheat	133,010	135,702	3,571,894	3,598,957
Barley or bere	251,822	251,915	2,385,783	2,316,332
Oats	1,007,891	1,007,682	2,715,707	2,705,837
Rye	11,402	12,106	71,495	66,875
Beans	23,835	24,535	540,835	524,005
Pease	2,909	2,991	389,547	361,545
Total under corn-crops	1,430,869	1,434,937	9,675,261	9,573,551
Under all crops	4,516,090	4,538,334	30,838,567	31,004,173

STATISTICS OF GREAT BRITAIN.

Summary of total acreage under each principal crop, and of the number of live stock returned in Great Britain, in each year, from 1868 to 1872.

	1868.	1869.	1870.	1871.	1872.
PRINCIPAL CROPS.					
Wheat:	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
England	3,396,890	3,417,054	3,247,973	3,312,550	3,336,888
Wales	130,552	135,562	126,928	126,334	126,367
Scotland	124,683	135,741	125,642	133,010	135,702
Great Britain	3,652,125	3,688,357	3,500,543	3,571,894	3,598,957
Barley or bere:					
England	1,780,201	1,864,088	1,963,744	1,964,210	1,896,403
Wales	151,608	157,582	163,853	169,751	168,014
Scotland	219,515	229,810	244,142	251,822	251,915
Great Britain	2,151,324	2,251,480	2,371,739	2,385,783	2,316,332
Oats:					
England	1,488,470	1,511,975	1,490,647	1,454,144	1,442,075
Wales	257,153	252,970	253,057	253,672	256,074
Scotland	1,011,430	1,017,775	1,019,596	1,007,891	1,007,688
Great Britain	2,757,053	2,782,720	2,763,300	2,715,707	2,705,837
Potatoes:					
England	327,173	356,829	358,890	391,531	339,056
Wales	47,431	49,107	48,602	51,853	48,417
Scotland	166,939	179,275	180,169	184,307	176,615
Great Britain	541,543	585,211	587,661	627,691	564,088
Turnips and Swedes:					
England	1,605,980	1,614,580	1,641,686	1,592,933	1,512,496
Wales	70,350	67,098	70,293	69,833	69,185
Scotland	488,812	489,848	498,932	500,978	561,826
Great Britain	2,165,142	2,171,526	2,210,911	2,163,744	2,083,507

Summary of total acreage under each principal crop, &c.—Continued.

	1868.	1869.	1870.	1871.	1872.
PRINCIPAL CROPS.					
Clover, and under rotation:	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
England	2,370,638	2,604,902	2,766,777	2,694,370	2,822,392
Wales	328,232	260,899	398,282	375,086	370,850
Scotland	1,261,138	1,182,925	1,339,825	1,299,992	1,320,209
Great Britain	3,960,008	3,448,726	4,504,884	4,369,448	4,513,451
LIVE STOCK.					
Cattle, (exclusive of horses:)					
England	3,779,691	3,706,641	3,757,134	3,671,064	3,901,663
Wales	593,373	589,108	604,749	596,588	602,738
Scotland	1,050,917	1,017,724	1,041,434	1,070,107	1,120,593
Great Britain	5,423,981	5,313,473	5,403,317	5,337,759	5,624,994
Sheep:					
England	20,930,779	19,821,863	18,940,256	17,530,407	17,912,904
Wales	2,668,505	2,720,941	2,706,479	2,706,415	2,867,144
Scotland	7,112,112	6,995,337	6,750,854	6,882,747	7,141,459
Great Britain	30,711,396	29,538,141	28,397,589	27,119,569	27,921,507
Pigs, (exclusive of those kept in towns and by cottagers with less than one-fourth of an acre of land:)					
England	1,981,606	1,629,550	1,813,901	2,078,504	2,347,512
Wales	187,319	171,675	198,547	225,456	238,317
Scotland	139,614	129,227	158,690	195,642	185,920
Great Britain	2,308,539	1,930,452	2,171,138	2,499,602	2,771,749

CATTLE-RAISING IN TEXAS.

In the latter part of January last this Department addressed to correspondents in all the counties of Texas in which cattle-raising has been a prominent industry, circulars, soliciting accurate information respecting the extent, modes, profits, and tendencies of that business in their respective localities. Correspondents known to have special facilities for obtaining the information desired were requested, after careful investigation, to give facts and estimates, based on reliable data, respecting the total number of cattle, the proportion of different classes named, the amount of feeding and care bestowed, the cost and profit of raising, and some indication of the size of the larger herds. The information embodied in a large number of responses is here presented in condensed form.

MODES, COSTS, AND PROFITS OF RAISING.—The prevalent custom, to which there is scarcely an exception, is to let herds run at large the year round, without any feeding. Hence, besides taxes and interest on the amount invested in the herd, the only expenses are for herdsmen and their equipments, for additional help in branding and marking, and for marketing. In herding advantage is sometimes taken of the principle of co-operation. Our correspondent in Cooke County states the leading facts of cattle-raising in Texas thus:

The cost of raising cattle in this county is the interest on the money invested, (and the cost of a stock is commonly $6 per head from yearlings up;) the tax on the value of the stock, and the cost of the hands and horses to attend to them about five months of the year. One hand and four horses are required to the thousand head. Several stock-raisers operate in connection; hire a man to drive the provision wagon and cook for the hands; and by thus throwing their forces together it does not require so

many men and horses as it would were each stock-raiser to operate alone. Hands can be hired at from $15 to $20 per month. The horses employed are range-horses, and they subsist on the grass. They will gather up their cows, calves, and beeves, drive them to the most convenient ranche, pen them, mark and brand the calves, let the cows and calves go, but hold the herd of beeves. A "ranche" here is any farm house, or even a cabin, on the prairie, with an inclosure used for penning cattle. Stock-raisers in Cooke, for instance, will hunt their cattle in Denton, Tarrant, Wise, Montague, and Grayson. They gather up, mark and brand, from time to time and turn loose. All stock cattle and horses must make their own living on the range. Cattle receive no attention from the owner, save that of marking, branding, and gathering for sale. Steers are generally thrown upon the market at four years old; but in any lot of cattle gathered as beef-cattle you will find more or less from five to seven years old, which are always in better condition than the four-year-old ones, and stand driving better. Barren cows are sold at from four years old, upward. Owing to the high price of corn, cattle, beyond a very insignificant number, are not fed for the market. Those who make it a business drive their cattle to Missouri, or farther north, where corn, &c., can be purchased at comparatively low rates.

This correspondent states that a leading stock-raiser, who had kept a strict record for seven or eight years, found that, in from 600 to 1,000 calves annually branded, the difference between the males and the females never exceeded twenty. He further reports that Texas cattle are evidently deteriorating; that they do not attain to the same size at the same age they once did, and "not nearly so many heifers become mothers at two years old as formerly, when the range was much better." He estimates that at present the number of calves found for branding in the spring is one-fourth of the number of the whole herd; but "some few years ago, cattle properly attended to would double their number in three years." The profits, formerly 33 per cent., are now assumed to be only 25 per cent.

A few extracts from other correspondents will afford additional light respecting treatment, cost, and profit:

Guadalupe: When the calves are a few weeks or months old they are branded and turned loose, and perhaps never seen again by the owner until driven up to be sold or butchered, or to secure the calf by branding. No one in our county pretends to herd his stock, except when they are brought together to be sent to market. The increase is about all profit, there being almost no expense incurred in feeding or wintering. *Kaufman:* Herding the only cost; profit, about 30 per cent. *Liberty, Chambers, and Jefferson:* Cattle support themselves upon the natural grasses, and the only care exercised is by superintending herdsmen, whose force is doubled in the spring at marking and branding time. Stock-men have lost seriously this winter, and the profit in raising is reduced to about 25 per cent. *Travis:* In this county cattle are permitted to run at large on the prairies, and are only collected in herds at the nearest pens at branding time. No feeding in winter. Hands are hired at $20 per month to brand and mark. *Mason:* The actual cost of raising, or rather permitting a male calf to raise itself to be a "four-year-old beef," is literally nothing, except the marking and branding of the calf, and the interest on the capital invested in the mother-cow. The cost of marking and branding ranges from 25 to 50 cents per head, never more. Average four-year-old beef-cattle are selling here this spring at $12 in coin per head: choice beef-cattle, at $18 per head. *Austin:* The only care heretofore has been the gathering and branding of the cattle in spring, also of those cattle that have left their customary range. If done by others, it has been the custom to give every fourth calf. The ruling rates for stock-cattle the past year were from $5 to $6 specie per head; beeves for the city market, $14 specie per head. *Atascosa:* It costs about one-fourth the gross profit to raise cattle for market. Feeding is entirely dependent on the wild grasses. In caring for cattle we have to keep hands in the work two-thirds of the year, furnishing, for one thousand cattle, about ten horses and two hands at $15 per month, and provided with horses, coffee, breadstuff, and salt, but no meat, as they furnish themselves with fat calves. The size of herds in this county ranges from 300 to 10,000. *Grayson:* Heretofore there has been no cost attending the raising of cattle, except that of branding and marking; that usually costs the owners of large herds the hire of a few hands for some two or three months. There are no cattle fed here except a few milch-cows and work-oxen. Good beef-cattle are worth from $15 to $20 per head, and do not cost, I presume, the producers more than $1 per head. Milch-cows are worth from $10 to $20 for cow and calf. Stock-cattle, cows, and calves, and two-year-olds, will average $5 per head. Our butchers are still (February 3) buying cattle from the grass, and we have some for beef still on the market.

The range of estimates for the cost of production, it will be noticed, is somewhat wide. This may be due in part to variation of the margin between the estimates and the actual cost; but probably is chiefly due to a corresponding range in actual cost, owing to different degrees of advantage or disadvantage of location or surroundings, and extent of losses in severe weather, and especially to different degrees of business tact.

LOSSES.—Texas is probably before any other State or Territory in advantages for raising cattle without expense for feeding, shelter, or inclosure. But even here the risks and liabilities to losses, for the want of such conveniences, are so great as to almost force the conclusion that smaller herds of better quality, with provision for pasturage, feeding, and sheltering as occasion required, would be more profitable. The return from Refugio represents that two years ago the number of cattle in that county, according to accurate estimate, was not less than 100,000, but deaths from starvation the last two winters will reduce it to 50,000. In Guadalupe, last winter, while the few who provided pastures saved the most of their cattle, the loss, from cold and starvation, was terrible. In Hunt, owing to the severity of the winter "many of the yearlings have died, and many more will" before grass springs up anew.

Bexar: Cattle are dying so fast that no one can tell how many are left, or how many are gone. Some say more than one-half are already dead, and others put it still higher. One man informs me, that during a trip from the coast up here, one hundred and fifty miles, he was rarely out of sight of dead horses and cattle, and in one place he stood and counted eighty mares and colts (dead) within fifty yards. This of course only applies to stock within the line of settlements—farther west where there are very few settlements and less stock they do better. Not the least preparation of any kind is made to feed cattle, horses, or sheep, except those kept up for use, and the supply of grass has become exhausted—eaten and tramped out.

The returns from Atascosa and Live Oak Counties, represent that the severity of last fall and winter has been so fatal to cattle that it is impossible to estimate the numbers now living; from Medina, that "under the trying circumstances of last winter—no grass, and intensely cold weather—nearly one-fourth of all our cattle perished; and milch cows in a large proportion;" from Grimes, that "my neighbors and my own experience is, that out of 300 to 500 head each, our stocks have gone down 50 per cent. in less than six years, without selling or using 25 per cent. of the increase;" from Austin, "that, as the large stock-raisers do not feed their cattle, and as owing to a four months' drought in the fall, they were reduced at the beginning of winter, they are dying in large numbers, and it is safe to estimate the loss by death, the present disastrous winter, at between 25 and 30 per cent.;" from Mercer, that, "the mortality of cattle during the winters of 1871 and 1872 has been without a parallel—principally among cows and the younger stock. The most reliable estimate I can get of calves branded in 1871 was 75,000, and in 1872, 60,000. How many of them are now living, I can give you no estimate that I would consider reliable. Cattle stocks are generally calculated at the rate of 4 to 1—that is, if a stock brands 1,000 calves, it is estimated that the stock is 4,000 head—but it rarely ever gathers that number of late years."

MILCH-COWS AND WORKING-OXEN.—In the cattle-raising sections of Texas, the number of cows and oxen raised and trained for domestic uses, whether for home use or to be marketed, is comparatively small. According to the report from Refugio, "not more than one in a hundred

of cows is milked, and not more than one in a hundred of the male cattle is broken to work." Reports agree in representing that very little attention is given to the quality of milch cows, and that they and working oxen receive very little feed or extra care.

Mercer: But few cows have been milked the last few years, on account of the scarcity of grass around the ranches, and no ranchero pretends to supply himself with hay or fodder for milch cows. Nearly all the old and gentle ones have died, and we will, if we want milk, have to get gentle, young stock. Oxen have, in a measure, given way to horses and mules. The most serious loss to the cattle-men last winter was bulls. The law requires a bull to be left with every 40 cows; it has not been done, and the old stock nearly all died out. This will be felt worse next year. *Hunt:* No cost of any consequence is incurred in feeding milch cows or working oxen. They subsist on the range, and few cows are milked during the winter months. *Medina:* No stables are provided for milch cows. They are fed on hay and corn-fodder during the milking season, whenever, from lean state of pasture, necessity requires, but not otherwise. So are working oxen during the working season. *Bexar:* Our system of cattle-raising is all wrong. We should have a less number, but of better quality. It takes, on an average, ten of our cows to give a water-bucket of milk, poor at that, while, I am told, one northern cow will give it twice a day. Ten Texas calves in the fall will not sell for over $15; and, I am told, one northern calf is worth as much. Then, why should we keep ten, when one will yield as much. I have also learned that an improved blooded beef in New York market is worth $40 more than a Texan, and that they will generally weigh 25 per cent. more at the same age. *Fayette:* Working oxen are diminishing rapidly, being substituted by mules and horses for wagoning and farming purposes.

MARKETS.—A large number of Texas cattle are sold to traders by producers at their ranches, to be driven into adjoining, or shipped to more remote States, where corn is much cheaper and stock much higher, and then fattened. A smaller proportion probably is sold at home, to be taken to market for beef without further fattening; and to some extent operators themselves drive their beeves, as collected from the ranches, to markets in Texas and neighboring States. Feeding cattle for market is scarcely known in Texas. Milan County reports that about 3,000 head were driven from that county to Kansas and other markets in 1872, at a net profit of $10 per head; Medina, that for the last two years all their beeves have been driven to Kansas, where, after deducting all expenses for driving, they have netted $13 to $17 in gold per head, (the ages ranging from three to five years,) and three-fourths of these proceeds are estimated as net profits, that is, after deducting all expenses of raising and marketing the animals, kept from three to five years, the profit is from $9.75 to $12.75, in gold, per head. But it is probable that in estimating this profit on the animals which are raised and sold, there is no offset for the immense number which are raised and perish in such winters as the last. The return from Burnet represents that, on account of the limited home market, stock-raisers have "had to resort to driving their surplus stock to Kansas; an operation by which many farmers have lost more money on one trip than they ever gained for many years previous." In Fayette "all beef-cattle, over three years old, are sold off every spring, and driven into Kansas and other markets."

CHANGES.—This system of cattle-raising now prevailing in Texas can never co-exist with agricultural improvement. So far as it does prevail, to that extent it must prove an effectual bar to immigration, and to all forms of manufacturing, mechanical, and diversified agricultural industry. The natural causes, therefore, which are operating to diminish its profits and necessitate its decline, whatever temporary losses they may occasion, are evidently working for the future good of the State. They are preparing the way for superseding an

exclusive system of rural industry, which, though it brings to a few, and only a few, very great profits in some years, yet largely reduces the annual average of profits by the very great losses it brings in other years, and which militates against almost all other forms of industry in the same section, necessitates a sparse population, and prevents internal improvements generally.

The following extracts will show the changes in cattle-raising now taking place in Texas. Some of them also point to or suggest the further changes and the ultimate advantages to result from them:

Hunt: The raising of cattle in this county is rapidly decreasing; owing, first, to failure of range, the settling up of the county, and the disposition of owners to turn their attention to agricultural pursuits; second, to the prospect that a fence law will be passed by our legislature. *Milan:* Grass is giving out, and stock-raising is falling off 35 per cent. yearly; in its stead agricultural interest is advancing rapidly. *Mercer:* The cattle men will have to buy land and put cattle upon it so as not to overstock it, or abandon the business. Public opinion and the rights of other parties will not submit any longer to this buffalo mode of raising cattle. The whole country is now eaten out by wandering herds of cattle and horses, and where beautiful grass formerly grew nothing but weeds can be seen. *Burnet:* The yearly increase of herds from some causes, especially the scarcity of food during winter, has not been as large of late as in former years. The size of cattle is also diminishing. *Grayson:* The cattle-herding system of our State has very materially changed in the last six years, and large herds are no longer found in this county. The most of them have been transferred to Wichita County, some one hundred and fifty miles west of this. There are no cattle fed here except a very few milch-cows and oxen. But the old programme must now be changed. Our wild grass is rapidly giving way, and as yet we have no tame grass that we can rely upon, and our cattle will have to be fed from our fields. Fine varieties are now being introduced, and they will take the place of our long-horned or Texas cattle, provided they acclimate well. *Lyon:* Cattle-raising, which has never been extensively carried on in this county, is gradually on the decrease, owing to the fact that the people are devoting almost their whole attention to farming. *Grimes:* A small herd of cattle will not pay well, as without strict attention they would all be stolen or killed out. It is a safe estimate to say that this county (now estimated to have 23,000 head) ten years ago had over 50,000, if not quite 60,000, head of cattle. Farmers are now turning their attention to improved stock; but not much can be done in that line until pastures can be fenced. *Fayette:* This county is ceasing to be a stock-growing one, and is rapidly being settled and fenced up for agricultural purposes. *Austin:* Many of our stock-raisers are getting discouraged, and are of the opinion that cattle-raising is no longer profitable, and are selling out.

SIZE OF HERDS.—A large portion of our correspondents overlooked the request that the number of cattle in the herd be given, with the name of the owner. The following are names of owners and numbers of some of the larger herds reported: *Kaufman:* Bailey Dougherty's numbers 2,000; J. Nash's, 1,500; John Moore's, 1,000; J. Hardin's, 1,000; Dr. Pyle's, 800. *Refugio:* Thomas O'Coner's, 3,000; John H. Wood's, 17,500; John Linny's, 17,500; J. and R. Dushel's, 9,000. *Hunt:* J. Harris's, 5,000; Jacobs & Black's, 2,000; Frederick Black's, 1,000; Thomas King's, 2,000; E. J. Jacobs and E. Cox's, 1,500; McDonald & Co.s, 1,500. *Cooke:* Samuel E. Doss's, 5,000; William Downard's, 4,000; Widow Loring and sons's, 2,500; W. J. Morris's, 2,000; Mrs. Brother's, 1,500; Frank Gooding's, 1,200; Elijah Parry's, 1,000; Mrs. Long's, 1,000. *Mason:* Ben. F. Gooch's, 20,000. *Austin:* E. Johnson's, 3,000; The brothers J. and J. Hill's, 4,000. *Fayette:* James Reynolds's, 4,000. *Grayson:* Burrel Yolooroo's, 10,000, scattered over ten or fifteen counties.

TOTAL NUMBER.—The following table shows the total number of cattle, and the proportion in the several classes specified, in the counties named:

Counties.	Milch-cows.	Working-oxen.	Herds.			Total of cattle.
			Under one year old.	Yearlings.	Two years old and over.	
Kaufman	1,000	500	3,000	3,000	500	8,000
Guadalupe		4,000	3,535	6,186		35,352
Hunt	2,000	1,000	6,000	5,000	6,000	20,000
Liberty	267	178	3,333	1,667	7,888	13,333
Chambers	267	178	3,333	1,667	7,888	13,333
Jefferson	267	178	3,333	1,667	7,888	13,333
Milan	3,000	2,000	8,000	6,000	17,000	36,000
McLennan		1,000	9,914			39,657
Refugio	500	250				50,000
Travis	3,000	300	3,000	4,285	16,715	30,000
Cooke		350	7,000	5,600		28,000
Medina		800	13,000	13,000		65,000
Burnet	800	5,000	10,000	7,500	19,500	50,000
Mason			8,000	8,000		40,000
Austin			12,500	12,500		50,000
Atascosa		1,000	6,000	1,500		30,000
Hood		600	3,000	3,000		13,000
Grimes	3,450	2,760	5,060	4,600	7,130	23,000
Fayette						35,000
Grayson	2,000	1,000	5,000	5,000	24,000	37,000
Leon	3,600	1,200	2,400	2,400	2,400	12,000
Total						642,558

The number of cattle in the twenty-one counties above named, reported for the census of 1870, and for State assessment the same year, were as follows:

Counties.	Reported for the census of 1870.				Reported for assessment in 1870.
	Milch-cows.	Working-oxen.	Other cattle.	Total.	Total.
Kaufman	3,033	675	21,935	25,643	25,043
Guadalupe	6,061	2,358	49,096	57,515	40,553
Hunt	9,672	2,077	25,141	36,890	29,266
Liberty	2,706	714	23,601	27,021	24,132
Chambers	1,205	334	24,338	25,877	23,861
Jefferson	743	204	15,103	16,050	45,445
Milan	4,106	1,564	23,142	28,812	
McLennan	3,774	1,131	20,857	25,762	30,326
Refugio	1,556	584	99,785	101,925	89,408
Travis	8,952	8,991	30,765	48,708	29,031
Cooke	3,015	994	26,509	30,518	26,101
Medina	8,264	1,337	32,960	42,561	51,971
Burnet	3,023	787	20,078	23,888	29,837
Mason	2,588	229	16,885	19,702	34,120
Austin	10,009	4,473	44,576	59,058	58,205
Atascosa	4,656	919	92,047	97,622	166,764
Hood	3,348	573	15,525	19,446	14,314
Grimes	5,779	4,765	17,814	28,358	22,463
Fayette	10,836	4,321	40,272	55,429	44,446
Grayson	4,840	1,704	24,463	31,007	24,710
Leon	5,263	1,414	18,041	24,718	24,638
Total in twenty-one counties	103,429	40,148	682,933	826,510	834,634

From the foregoing tables it appears that the twelve counties which report to this Department in 1873 a total of 20,151 milch-cows, reported in 1870 for the census 50,878; the eighteen counties which report in 1873 a total of 22,294 working-oxen, reported in 1870, 31,118; the twenty-one counties which report in 1873 a total of 642,558 cattle, reported in 1870, 826,510; the twenty counties which report in 1873 a total of 606,558 cattle, reported in 1870 for the census 797,698, and for assessment 834,634.

Taking into consideration the unquestioned fact that the returns for

assessment, on the average, fall considerably below the actual number, this comparison indicates a falling off within three years of not less than one-third in the aggregate numbers of cattle in the portions of the State covered by the reports. It also indicates that there are now in the counties reported only three-fifths as many milch-cows as there were in 1870; but it is quite probable that some of the reporters for the census did not distinguish between "milch-cows" and "cows that give milk." For instance; Hunt County reported a number of milch-cows equal to one-fourth the total number of cattle, which is just the proportion of "mother-cows" usually estimated as the average in herds and aggregates. The decrease in the number of working-oxen is sufficiently accounted for by concurrent statements of our correspondents that they are being gradually superseded by horses and mules.

FACTS FROM VARIOUS SOURCES.

A SUCCESSFUL EXPERIMENT IN TEACHING AGRICULTURE.—Soon after the close of the war there was formed in Baltimore an association of Friends for the purpose of advising and assisting impoverished Friends in the Southern States. The immediate object was to afford physical relief; but as the continuance of physical want can only be prevented by removing its causes, the association wisely connected with their beneficence a system of mental, moral, and religious education. Their principal field of operations was in the rural districts of western North Carolina. In the outset they were met by a difficulty which they foresaw, unless removed, must prove an insuperable obstacle in the way of effectually helping a community, where want of bread and want of intellectual and moral culture extensively prevailed, to rise to a condition in which they could support and educate themselves independently of foreign aid. Homes provided with facilities for secular and religious education imply adequate means. With a rural population these can be obtained from no other source than the soil. But in the section where their advice and aid were most needed, the soil had become so impoverished by thriftless cultivation, the herds and flocks were of such inferior, unremunerative varieties, and the prevalent modes of husbandry so necessitated, not only scant returns, but a still further exhaustion of the soil, that, without a change for the better, continued poverty and dependence were inevitable. Besides, it being the prevalent notion that the meager products of the land were owing, not to a defective style of farming, but to a worn-out soil, the disposition of the more capable and enterprising, especially among the young, to emigrate seemed to be restrained only by the want of means to get away. With a view to remedy this discouraging state of things, the association, in 1867, purchased a farm of 200 acres, located at Springfield, on the dividing line between Randolph and Guilford Counties. On this they placed, as their superintendent, an experienced and enterprising farmer, and furnished him the means of teaching improved agriculture by exemplifying its processes and by bringing within the reach of the farmers in the region round about the necessary facilities for entering upon a career of improvement themselves. He was expected to conduct his farming operations in such a way as to *show* to the farmers in the neighborhood what modern improved agricultural machines and implements are and how they are worked: what advan-

tages there are in utilizing all the manure that can be made on the farm, and superadding chemical and other fertilizers; in deep plowing and thorough cultivation; in draining and under-draining; in adjusting soils, fertilizers, and crops to each other by rotation and otherwise; in superseding, or at least improving, small, scrubby native cattle, sheep, and hogs, by thorough-bred stock; and in increasing the stock capacity of the farm by the culture of new grasses and other varieties of green fodder. He was also to be the agent of the association for bringing within the reach of farmers in that locality, and furnishing at cost, or nearly so, selected seeds, improved agricultural implements, and blooded stock, and for organizing agricultural clubs and awakening a spirit of inquiry and enterprise by lectures on farming, circulating agricultural newspapers, &c. The results of this practically benevolent enterprise have equaled the most sanguine anticipations of the association. In the winter following the purchase of the farm, through the agency of its superintendent many farmers' clubs were organized, nearly four hundred subscribers to agricultural papers were obtained, and about two tons of clover-seed were distributed at cost. In 1871 (no reports have come to hand for the intervening years) the superintendent reports, not only that the farmers in the immediate region are making rapid strides in agricultural improvement, but that the central leaven is extending from them into regions more remote. Among the evidences of this are noted, first, the greatly increased demand for clover-seed. At the time the farm was purchased, throughout that region the want of pasture and hay was an insuperable obstacle in the way of keeping stock to any extent. To meet this want the association made special efforts to secure a general introduction of clover. In 1868, in addition to two tons of clover-seed, several tons of the best Peruvian guano were forwarded to the superintendent, with instructions to furnish both the seed and the guano at cost to farmers willing to test them in conjunction. It was found that after once "setting" the clover on exhausted soil with guano there was no necessity for further use of it. In 1871, as a direct consequence of the example and facilities afforded by the association's farm, over 10,000 acres had been successfully seeded to clover, and the superintendent was confident that very soon clover would be largely cultivated on every farm in western North Carolina. A second evidence of a growing interest in agricultural improvement was found in the demand for improved agricultural implements. Among those he had furnished were mowers, reapers, wheel-rakes, iron and cast-steel plows, cultivators, clover-seed gatherers, &c. And it was observed that, into whatever neighborhood one of these agricultural machines, which supersede hand-power by horse-power, goes, it immediately becomes a silent orator which successfully pleads for the removal of stumps, stones, knolls, and filling hollows, and for the under-draining of places too wet and soft for horses and machine to pass over. A large amount of under-draining had been done on almost all the farms for many miles around. A third evidence was apparent in the increasing numbers who visited the farm for the purpose of *seeing* what is done on it and *how* it is done. In the spring of that year strangers came in such numbers that it required nearly the whole time of the superintendent to show and explain the improvements they had come to see and learn about.

Of thorough-bred stock, kept for production on the farm and for propagation in the surrounding region, there were five head of Alderneys, a Southdown buck, a Chester sow, a Berkshire boar, and, in greater or less numbers, offspring and crosses from the same. During the year, on

a small stream running through the farm, at a cost of $875 a bone-mill had been built, which will crush and grind 1,500 pounds of bones per day. It is believed to be the first ever built in North Carolina, and from it great benefits to the farms in the vicinity are anticipated. The superintendent thinks the region is well adapted to fruit-growing; and, in view of the results of experiments since he began his farming operations there, he is convinced that the choicest fruits can be grown on the poorest soils by fertilizing them with peas plowed under, and mulching the trees with leaves. He has made experiments in soiling for two years, and with so favorable results that he intends to feed in that way all the cows and heifers on the farm next year. He says:

> Last year I took from twenty square rods the food for one cow one hundred and twenty-two days, and this year have had nearly as satisfactory results. I have now growing one and a half acres of rye and one acre of oats for first feeding in the spring, to be followed with lucerne, Hungarian grass, orchard-grass, clover, and corn, and wind up with beet, carrot, and turnip tops. The bull and one cow have not been out for eighteen months, and are perfectly healthy. Labor is cheap, but manure is the great desideratum.

In their report for 1872 the association represent that their agricultural enterprise at Springfield, with respect both to the farm and to the beneficial results they designed by it to diffuse through the neighborhood and over the State, has been favored with continued and growing success. On the farm, now well stocked with horses, mules, cattle, sheep, hogs, and fowls, the barn was full, very large crops of hay, wheat, and corn having been produced. From a field of seven acres, which up to within three years had been covered with briars and sassafras, and considered the most exhausted part of the farm, 170 bushels of wheat had been harvested, 40 bushels from one acre, the other six averaging 21⅔ bushels.

The superintendents both of agriculture and education are reported as receiving the hearty co-operation of all classes of citizens, and as frequently invited to deliver public addresses relative to their respective departments, not only in the neighborhood of their central operations, but in distant parts of the State. The educational efforts, first made with the special design of encouraging and aiding the children of needy Friends, have now grown into general and permanent schools. In eleven adjacent counties, out of 6,000 children who have received instruction since 1866, more than half were from families not connected with the order of Friends. The superintendent of the farm reports to the association the following interesting summary of results thus far:

> The effect of our operations on the community has been gratifying, and can be seen for fifty miles around. About 15,000 acres have been sown with clover in the surrounding counties since our operations commenced. Many improved implements have been introduced. Instead of the scythe and the cradle, are frequently seen the mower and the reaper. Large numbers of people from all parts of the State continue to visit the farm, to see for themselves the new way, and they very generally express themselves satisfied that it is an improvement on the old exhaustive system. All such, more or less, will become centers of influence and improvement. The effect of our educational and agricultural efforts in staying the tide of emigration to the West is very apparent, and has already saved to North Carolina hundreds of her best citizens.

STATISTICS OF BUTTER AND CHEESE PRODUCTION.—The averages involved in the statistics of butter and cheese production are frequently brought forward at the meetings of dairy associations to show the progress of these industries and to illustrate certain points connected with their management. The census of 1870, supplementing other data, affords the means of presenting some of these averages with more precision

and completeness than have hitherto been possible. The following abstract is founded chiefly on the census publications of the three past decades, compared with official tables of imports, exports, &c.:

From 1850 to 1860 there was an increase of 47 per cent. in the butter product of the United States, and a decrease of 2 per cent. in the cheese product; increase of population 35½ per cent. From 1860 to 1870 the cheese product increased 57 per cent., and the butter product 12 per cent.; increase of population 22½ per cent. For the twenty years, from 1850 to 1870, the increase of the cheese product was 54 per cent., and that of the butter product 64 per cent.; increase of population 66 per cent. The growth of the cheese interest from 1860 to 1870, consequent on the rise and extension of the cheese-factory system, presents a remarkable contrast to the exhibit of the preceding decade. The average annual export of cheese (domestic product) during the ten years ending June 30, 1870, was 43,641,796 pounds, against an average of 7,853,383 pounds for the preceding decade. The exports of 1871 and 1872 averaged nearly 65,000,000 pounds.

The census of 1870 states the number of cheese-factories in the United states at 1,313, and their product of cheese at 109,455,229 pounds, showing an average of 83,363 pounds per factory; number of cheese-factories in New York, 818, averaging 95,362 pounds of cheese. This statement of production chiefly covers the favorable season of 1869. On referring to the New York State census of 1865, it is found that the reports of 380 factories exhibited an average of 83,278 pounds of cheese, and 424 reports showed an average of 307 cows per factory for the season. One hundred and thirty-three factories, "using the milk of 300 cows and upward," gave full statistics, including the length of the working season, the latter averaging a little more than six months; average number of cows, 504; average of cured cheese per cow, 283 pounds; average product of cheese per factory, 142,432 pounds.

From comparison of all attainable data, it would appear that in 1869 and 1870 the cheese-factories of the United States did not average over 300 cows each, and that the average of cheese per cow for the working season fell below 300 pounds. There is no reason to believe that this average of cows has been increased since that time; indeed, the reports of the dairy associations have indicated a tendency in the contrary direction. New York factory statements, appearing in the reports of the American Dairymen's Association, show that 400 pounds of cheese per cow for a season of seven months to seven and a half months fairly represent the extreme averages of the State—that is to say, averages covering a long season.

The United States census exhibits of 1850, 1860, and 1870, collated with statistics of export and import, show, for each individual, an average yearly consumption of butter ranging from 13½ to 14½ pounds, the latter figures being for the middle period, or that of 1860. The average consumption of cheese has ranged from very nearly 3 pounds to 4 pounds, the latter being the exhibit of 1850. For 1870 the rate was a little over 3 pounds per individual. Mr. G. E. Morrow, of Madison, Wisconsin, secretary of the Northwestern Dairymen's Association, states that Madison, with a population of about 10,000, averaged, in 1872, a consumption of 4 pounds of cheese per individual.

The following table shows the rates of increase of the butter and cheese product, during twenty years, in the States named, with the rates of increase of population:

States.	Percentage of increase of population.			Percentage of increase in amount of butter produced.			Percentage of increase in amount of cheese produced.		
	1850 to 1860.	1860 to 1870.	1850 to 1870.	1850 to 1860.	1860 to 1870.	1850 to 1870.	1850 to 1860.	1860 to 1870.	1850 to 1870.
New York	25½	13	41	29	4	34	Loss, 2½	107½	102½
Pennsylvania	25½	21	52	47	4	53	.....	11	11
Ohio	18	14	35	41	3½	46	4	12	16
Illinois	101	48½	198	124	28½	188	44	212	349
Michigan	88	58	197	119½	57	245	62	41½	129
Iowa	251	77	521	450	130	1,167	338	46	540
Wisconsin	154	36	245	274½	65	518	176	198	722
Vermont	⅓	5	5	31	12	47	Loss, 6	Loss, 5	Loss, 10½
Indiana	36	24½	70	42	25	78	Loss, 3	Loss, 34½	Loss, 37
Massachusetts	24	18	46½	3	Loss.21	Loss,19	Loss, 25	Loss, 22	Loss, 42
Maine	8	Loss, 1·5	7½	26½	Loss, ½	26	Loss, 26	Loss. 36	Loss, 53
New Hampshire	2½	Loss, 2½	.....	Loss, ⅓	Loss,14	Loss,14½	Loss, 30	Loss. 61	Loss, 73
North Carolina	14¼	8	23	14	Loss, 9	3½	Loss, 47	142½	29

GROWING SUGAR IN LOUISIANA.—Our correspondent in the parish of Terrebonne writes as follows:

Our sugar-crop last fall was seriously injured by freezes on the 15th, 16th, and 17th of November. The canes were killed to the ground, and nothing but the cool weather which followed prevented them from becoming sour and an entire loss. Taking the depreciation in quantity and quality into consideration, the loss may be put at one-fourth of the crop. A good deal of seed-cane also was caught before windrowing and destroyed. One of the principal difficulties in sugar culture in this climate is the protection of the seed through the winter. Every conceivable plan has been tried, and all sometimes fail. Protracted rains, or unseasonably warm or intensely cold or very dry weather, injure the seed more or less, either in mats or windrows. The last winter was generally cool, without hot spells, and without severe freezes. There were frequent showers, and no long wet or dry seasons. The result is that the seed-cane kept better than has been known for many years. Having this first and great advantage to start with, we have secured a first-rate stand of plant-cane. The spring has been rather too cold, but still the plant-cane is two or three weeks in advance of what it was last year. The stubble-cane cut before the freezes in November was injured by those freezes, and is backward; but what was cut after that period is very promising. Up to the 13th of May we had but little to complain of, but on that day the rains set in and have continued up to this time, (the 31st.) There is still ample time, however, to make up for this loss, if we can get a few weeks' seasonable weather. The cane has been growing luxuriantly all the time, and the only danger is that the grass will injure it. The corn-crop will be injured, and some will have to be given up to save the cane if we do not have dry weather soon. With our exotic crop much depends upon the advancement of the plant, and how the growing crop compares with that of previous years becomes a question of interest. For several years I have kept a weekly record, which I find valuable. A quotation follows:

"Record for May 18, 1873: First planting of the cane in the spring averages 380 stalks per 100 feet. Last planting of cane in the spring averages 230. Fall-planted cane averages 175. First year's stubble averages 220. Second year's stubble averages 150. For the same date last year: First planting of cane in the spring averages 230 stalks per 100 feet. Last planting of cane in the spring averages 140. Fall-planted cane averages 160. First year's stubble averages 200. Second year's stubble averages 110."

I find that a record of condition three weeks later comes nearest to the final result: "June 2, 1872: First planting of cane in the spring averages 330 stalks per 100 feet. Last planting of cane in the spring averages 250. Fall-planted cane averages 180. First year's stubble averages 230. Second year's stubble averages 170 stalks per 100 feet.

These records show the marked advantages to be derived from spring planting, and develop many facts which might otherwise pass unnoticed. In making these records I take, in different parts of the field, rows of an average thickness as nearly as can be told by the eye, measure off 100 feet, and, with the assistance of a light cane, count all the shoots out of the ground. These counts are averaged, and the result put down for that of the class to which it belongs. Up to the 1st of June the height of the cane is a matter of no importance, the main point being its thickness in the row.

GRAPE-CULTURE NEAR WASHINGTON.—A correspondent furnishes for this Department an account of a successful experiment in grape culture made by himself. The location is on the south bank of the Potomac, about two and a half miles above Washington, on a tract of land purchased by him since or during the late war. He says:

I found upon this land that had been stripped of timber by the Army during the war, growing in the greatest luxuriance, thousands of wild grape-vines. As some of them had attained an enormous size, running to the tops of the highest trees, it occurred to me that the soil must be especially adapted to their growth, and if so, the cultivated varieties ought to do at least equally well. I consulted such men as Dr. Warder, of Ohio, and William Saunders, of your Department, who, after examining the soil, pronounced it "a perfect grape-soil." I therefore resolved to try it, and, in the spring of 1866, planted one thousand vines, half of which were the Concord, and the balance other popular varieties. I procured first-class vines, and planted them with great care, as follows: Selected ground sloping to the southeast and east, plowed it from 8 to 10 inches deep, harrowed it fine, and planted in rows 8 feet apart both ways; set an 8-foot stake at each plant, and mixed with the soil, about the roots, one quart of ground bone and a shovelful of old, well-decomposed stable-manure; pruned the roots, also cut the top or vine back to three or four buds; and when the buds had grown from 1 to 2 inches, rubbed off all but one, the strongest; trained that to the stake by tying, and pinched off at second leaf all lateral shoots, thus concentrating the growth in the one cane; gave them clean cultivation. The next February, when there was no frost in the wood, I cut it back to three or four buds of that year's growth, and let only two buds grow; trained and managed these two canes the same as the one the year before. During the following February I cut the two canes back to 3½ feet long, removed the stakes, and built a trellis over each row, in the following manner: I set 8-foot cedar posts half way between each vine, commencing with one set 4 feet from each end of the rows, and nailed to these posts white-pine strips full 1 inch thick by 4 inches wide, the first 1 foot from the ground, and the second 4 feet above that, from lower edge to upper edge; then nailed to these strips good white-pine laths, 9 inches apart. I then tied the two canes, on the two-arm system, to the lower bar; trained and tied the shoots from these canes to the trellis. Each shoot bore this year from three to four bunches of grapes; pinched each shoot off at from three to four leaves above the last bunch of grapes, and as it grew again, pinched it off at second leaf; and so on to top of trellis. When the clusters ripened, I was well repaid by the beautiful sight they presented. Both bunches and grapes were very large and perfectly formed. I readily sold the entire crop at 15 cents per pound on the vine. Some of the vines yielded 15 pounds each, and as beautiful and perfect as those grown under glass. My success attracted attention. Many enterprising farmers and citizens of Washington came to see my vineyard, and pronounced it the finest, as to growth of wood, foliage, and grapes, and as to training, trellis, &c., they had ever seen. The Concords surpassed all other varieties in all the desirable qualities. Having occasion, several weeks after my grapes had been disposed of, to visit central New York, I found many Concords grown there just in the market, but they were much inferior in point of perfect maturity, flavor, and sweetness. The crop of last season was the fifth I have grown, and was the largest; and although the average price realized was but about half that received for the first crop, it amounted to over $800 per acre, or about $700 net. I am annually enlarging my vineyard, which now comprises about six acres; expect to enlarge it to ten next fall. The soil and subsoil prove to be perfectly adapted to the growth of the grape, being composed of about equal parts of sand, loam, and clay, and containing considerable quantities of mica, with a subsoil of rotten rock, into which the grape-roots penetrate several feet. It is also just porous enough to absorb the rains; consequently no draining is required. In short, nature seems to have prepared this locality expressly for vineyards, as was plainly indicated by the spontaneous growth of so many wild vines. The extent of this natural vineyard-land is quite limited. It commences about one and a half miles above Georgetown and extends back from the Potomac say about one mile, but how far up the river is not known. While it is so well adapted to grape-growing, it proves equally good for all the small fruits—strawberries, blackberries, raspberries, &c.

SUCCESS OF SEEDS FROM THE DEPARTMENT.—Our correspondent in Troup County, Georgia, reports:

The Italian rye-grass sent by the Department of Agriculture is doing finely; sown the 8th of February, it will make good grazing now. The two quarts of spring barley, sown the 8th of February, is now in "the dough," averages about 3 feet in height, and will yield, I think, two or three bushels. The black-eye marrow-peas are fully 7 feet high, and we are eating peas from them daily; have never seen a variety do better in this section. The potato-oats will prove a failure. My black winter and yellow

rust-proof oats, sown side by side, the same day, will soon be ready for cutting, and are as fine as I ever saw in this section, while the potato-oats are about knee-high, and of a yellow, sickly appearance. The "Beeler upland" cotton is doing well. The silver-hull buckwheat is too young to tell much about it yet.

And our correspondent in Greenville County, South Carolina, reports, under date of June 5:

The "black-eyed marrow-pea," planted on the 15th of March, produced the first dish to-day. They are of excellent quality, well adapted to this climate; "5 feet high; strong and vigorous." The garden was manured from the barn-yard—plowed and harrowed in February—cultivated with a plow. The yield of peas is enormous.

CLOVER IN SOUTH CAROLINA.—Our correspondent in York County writes:

A few years ago clover was scarcely ever seen growing in this county, unless upon some small lot belonging to what the people called "a book-farmer;" now nearly every farmer grows from one-half of an acre to twenty acres. No machinery for threshing out the seed, that I am aware of, has thus far been brought here, and seed brought from northern markets is exclusively sown. In this county, on clay soil moderately fertile, clover has succeeded well; still, as yet, it is rarely planted as a crop, most farmers preferring to experiment on a small scale before seeding down with it any valuable portion of land. Its introduction here is a success, and its width will increase every year hereafter.

HARD TIMES IN ALABAMA.—Our correspondent in Franklin County writes:

Corn is scarce and high, commanding readily $1 per bushel. The farming interest is much depressed owing to the fall in cotton.

AGRICULTURAL ADVANTAGES AND DISCOURAGEMENTS IN FLORIDA.—Our correspondent in Wakulla County represents that in that section the people have become impoverished, lost all enterprise, "are deeply discouraged, and moving away." Plantations which, before the war, were among the most flourishing and famous, are now common grazing-grounds. And yet Wakulla County "lies contiguous to the Gulf, the sea-breezes are free and fresh, the climate is salubrious, and the soil productive." He concludes: "A full flood-tide of enlightened and energetic immigration is my only hope of immediate redemption."

ADVERSE SEASON IN NEW MEXICO.—Our correspondent in Mora County accompanies his statistical report for May and June with a statement which shows that the farmers in that Territory are passing through trying times at present. It is as follows:

You will see that the prospect is somewhat gloomy for the people of Mora County and from what I can learn it is not much better for all of the Territory. I have resided in this valley seventeen years, and in the Territory generally I have never seen so unfavorable a year for farmers and stock-raisers. My farm-book reports the fall of only about 8 inches of snow on the flat land during the winter; in fact, since September 6 of last year the ground has scarcely been moistened. The injury and loss among cattle and sheep are deplorable. The loss has been general, but individual cases of much greater loss than that reported are not unfrequent. I have heard of one gentleman who visited his ranch a short time back and found six hundred lambs already dropped by his ewes, and in scarcely ten days afterward his *mayordomo* wrote him that there were barely a hundred living, and his ewes dying at the rate of scores daily. Hunger and thirst are making sad havoc on the grazing-plains in every direction, for the spring-pasture is dried to the roots and the streams are so many dried gullies.

Many of the farmers residing at a distance of fifteen or twenty miles from the mountains have not planted a seed of any kind, and the probability is that two-thirds if not three-fourths of the farm-land in this county will lie idle this year.

AGRICULTURE IN ARKANSAS.—The following is a condensed statement of facts and views communicated by our correspondent in Garland (formerly Hot Springs) County. The soil in that section of the State, for the most part, is of a mineral cast. It yields not only vegetable products,

but hot and cold mineral waters, unexcelled in their medicinal properties, and silver, lead, zinc, copper, and iron ores. Garland County contains a mountain of stone which is believed to be the finest for whetstones in the country. The mineral and agricultural resources of the county are such that it only needs capital and enterprise to make it rank among the foremost in wealth and general prosperity. A part of the soil is barren, but the bottom-lands along the abounding rivers and creeks, and portions of the uplands, are unsurpassed in productiveness. With fair cultivation, the average yield per acre is about 1,800 pounds of cotton, 67 bushels of corn, and 28 bushels of wheat. The prevailing mode of farming is very defective. "They do not plow land in Arkansas, but only scratch it." A field of twelve acres, which, cultivated in the Arkansas style, had for the two previous years yielded only 22 bushels of corn per acre, was cultivated last year by a man from *Illinois*. He gave it a deep plowing and cross-plowing in December, 1872, and plowed it again on the 6th of February following. This was done with a strong yoke of oxen. He "laid off," covered the corn, and plowed between the rows twice, with a horse. The result of this more thorough cultivation was that he gathered 67½, instead of 22, bushels per acre, making a difference of 546 bushels—worth $1 per bushel.

There is a great need of a change for the better in farm stock. Horses are too light, hogs are of a very poor, thriftless breed, and cows, chiefly Texan cross-breeds, are generally poor milkers. There is yet greater need of improvement in care and keeping. Our correspondent bought four good-looking cows, raised in the county, at thirty dollars per head. They had averaged, for the first six months after calving, about 7 quarts of milk per day. He has a clover-field and grass-lots for them, supplies them with good water, salt, and shelter, and milks them at regular intervals. As a consequence they have increased to an average of 12 quarts per day for the same period—a gain of 5 gallons per day on the 4 cows. He paid for clover and grass seed, $14; for expenses in cultivating the same, $18. He sold clover and grass, in addition to what was consumed by the cows, to the amount of $31.75. He estimates his milk at sixty cents per gallon, (which seems a very high figure,) and at that rate the gain in six months, resulting from better care and feeding, would amount to $540—nearly all net gain, as the surplus clover and grass paid the expense of cultivating. There are now in the county only about forty-seven acres in clover and fifty in grass.

CROP-PROGNOSTICS.—The following notes are from communications by correspondents outside of our regular corps:

Saint Charles County, Missouri, May 10.—Our wheat is looking well; our oats could not look better. We are now planting corn. Potatoes—the Early Rose and Goodrich—are just up.

Fayette County, Texas, May 5.—Crops one month later than last year. The cold "norther" which commenced April 7 killed all the cotton and most of the corn and Irish potatoes.

Randolph County, Illinois, May 15.—Wheat looks exceedingly well, much better than at this time last year. Oats and grass also look well. Very little corn planted yet, and that mostly rotted in the ground; potatoes have also rotted—being visited by both the cut and army worm. Vegetation comes on more slowly than for many years. Will be no peaches, and very little other fruit.

Montgomery County, Kansas, May 10.—Spring cold and backward. Chinch-bug in the oats and spring-wheat. Winter-wheat looking very well.

Union County, South Carolina, May 14.—Wheat better than last year. More oats sown; season more favorable. Think the crop will be 25 per cent. better than the last. More barley sown; farmers are finding out that it will give them something green for stock sooner than anything else. Hardly as much corn planted as last year, but 10 per cent. more of cotton, and better stands of cotton now than at any time last year.

Northampton County, Pennsylvania, May 25.—We have had frosts nearly every night since the setting in of spring, retarding the growth of everything. The season has been very wet and late. Winter-wheat and rye look well, and promise a fine yield.

Osage County, Kansas, May 8.—Very backward spring; vegetation five to six weeks behind last spring. Wheat and oats, though backward, promise a heavy crop.

Dickinson County, Kansas, May 13.—We are now satisfied that, to insure a crop in this latitude and altitude, winter-wheat must be sown the last of August or the first week in September. Some of mine was sown on the 4th of September last and some after the 21st. The latter, though plowed in, was totally winter-killed, but the former, though harrowed in, from present appearances will yield 20 bushels per acre.

Columbia County, Wisconsin, May 10.—Winter-grain on old land looks bad; badly killed. It is better on new land, especially where shaded with belts of timber on the north and west sides.

Blanco County, Texas.—Grasshoppers have entirely destroyed the wheat-crop this spring in this and adjacent counties, but the people do not seem discouraged. Corn generally sells here at 50 cents per bushel; wheat at $1.50.

DESTRUCTION OF DESTRUCTIVE INSECTS.—Our correspondent in Gadsden County, Florida, under date of June 1, writes as follows:

During the present week I have received reports from three different sections of the county announcing the appearance of the dreaded caterpillar. These are doubtless sporadic cases, and furnish no basis upon which to predicate any ultimate result. While upon the subject I will state a fact, which is, at least, suggestive, and may lead to good results. Some years ago I was informed by Prince Murat (now deceased, but who then resided on his plantation located fourteen miles east of Tallahassee) that his crops of cotton had been for several successive years protected from the ravages of the caterpillar by the intervention of numerous flocks of the common "blackbird," which preyed voraciously upon these pests of the cotton-field. The secret of their advent to that locality he attributed to the fact that his negroes were in the habit of cultivating small patches of rice in the damp places, occurring in different portions of the plantation. As a confirmation of his statement, I will state a fact which came under my own observation during the past year. About the time that my corn had fully matured, the "grass-caterpillars" suddenly made their appearance in the fields, and were rapidly destroying the young grass, which we highly value for fall-pasturage. I observed at the same time that a large flock of domestic turkeys with their young came up of an evening with their craws very much distended. Suspecting the cause, I determined to watch them, and found to my great gratification that they were feasting upon the caterpillars. In the course of a day or two not a worm could be seen, and the pasturage was saved. These facts suggest the idea of introducing into the cotton-region the "English sparrow," which, I understand, has proven an effectual safeguard to the ornamental trees in the vicinity of many of the northern cities. From the reported habits and great fecundity of these birds, I entertain but little doubt that if extensively introduced, they would, in the course of a very few years, prove an effective antidote to the advent of this great enemy of the cotton-plant.

PROSPECTS FOR THE SEASON IN TENNESSEE.—Our correspondent in Macon County reported, May 1, that in that county wheat was thin on the ground, having been frozen out during the winter; cattle were in poor condition; pastures still bare, and vegetation generally at least one month later than usual. Our correspondent in Grundy makes a similar report. The spring has been extraordinarily cold and backward. Early grapes and most fruits have been killed by the frost; grass is backward, and cattle are on half-fare. Oats, and "what remained of winter-wheat and rye," are represented as doing well.

IMMIGRATION.—"Another influx of immigrants from Switzerland" is reported in Grundy County, Tenn., and "new farms rise up all around."

SEVERE FROSTS IN SOUTH CAROLINA.—Our correspondent in Fairfield County reports that, on the night of April 13, a more damaging frost occurred than has visited that section since 1849. The ground, where moist, was frozen to some depth. Corn that was large enough for the plow and hoe was killed below the surface. Wheat that had begun to develop heads was killed to the ground. Fruit was entirely destroyed. Peaches, as large as pigeon's eggs, "are as black as night." Cotton that was up was ruined, but owing to a drought of some six weeks, the most of the cotton-seed in the ground had not sprouted.

and, therefore, the frost has not materially affected the prospects for a cotton-crop.

Our correspondent in Greenville County also reports on the morning of April 26 the most destructive frost in that locality which has occurred within the memory of the living. Grape-vines that had grown "upwards of a foot" were killed outright. Indigenous varieties of grape-vines suffered the most. His own Scuppernongs are all destroyed for this year. The Concords stood it the best. He has never before known grape-fruit to be destroyed by frost in that county, though his remembrance extends back nearly fifty years. Cherries, plums, and strawberries, all nearly grown, were killed. Even blackberry and raspberry blossoms were smitten, though not all. Potato-tops, nearly six inches high, were cut down to the ground, and pease, radishes, and beets were killed absolutely. Forest-trees were blackened, the common maple being the only tree among the deciduous which escaped uninjured. Next to that in power of resisting the frost were the red elm, the beech, and the hickory, in the order named.

WEATHER AND CROP PROSPECTS IN VIRGINIA.—Our correspondent in King George County reports:

With the exception of the 8th and 9th, when the mercury rose to 82° and 87°, April was uniformly cold. There was, however, only one frost, on the 26th, and that, though sharp, did no harm. The mean temperature was 56°.2, about three degrees lower than last year. There were several light rains, and one heavy one on the 16th, when it fell all day. The aspen was in bloom on the 1st; the apricot on the 5th, when the first whip-poor-will was heard; the cherry and peach on the 6th; the plum and purple magnolia on the 8th; pyrus-japonica on the 9th; spirea and wild plum on the 10th; pears and red-bud on the 11th; spice-wood on the 12th; flowering-almond on the 13th; early apples on the 14th; lilac on the 15th; dogwood on the 21st; calicanthus on the 29th; and bird-cherry on the 30th—generally about ten days earlier than last year. The bloom of fruit is very full, and the indications are favorable for a plentiful yield.

Wheat has improved considerably, but bare and thin spots are visible, which must in some degree curtail the product, notwithstanding the favorable season. The Fultz wheat maintains its ascendency. Corn-planting began about the middle of April, and (May 1) is still in progress. The land is for the most part in good condition.

Rains have amounted to but little over half the average for twenty years, and were as follows: April 1st–2d, 0.025 inch; 9th, 0.16; 11th–12th, 0.135; 16th, 0.745; 20th–21st, 0.095; 23d, 0.10; 25th, 0.005; 28th, 0.29—total, 1.555 inch.

CAUSES OF HIGH PRICES OF LAND IN CALIFORNIA.—Our correspondent in San Joaquin County reports that the price of lands for farming and grazing has doubled since 1860, and is still increasing. And yet this advance in price he represents is neither a result of improvement in the land nor of increasing profits from agriculture, but rather of causes which greatly hinder agricultural prosperity: First, the greater and more valuable portion of what was the public domain is now held at high prices by speculators, who obtained it partly by direct purchase at the lowest rate, partly by "agricultural scrip, at 37½ cents per acre," and partly by the confirmation, through false testimony, of fraudulent or pretended Spanish grants; secondly, by a recent decision of the General Land-Office, what little of public land is left in the foothills and mountains is held to be mineral in character until proved to be more valuable for agricultural purposes, thus throwing the burden of proof upon the tiller of the soil. Our correspondent is decided in his opinion that it ought to be the other way, that the agriculturist has the primary claim upon the soil, and therefore all lands should be regarded as agricultural until proved to be more valuable for some other purpose. He further claims that while land-speculators and mining-speculators are apt to be strongly represented in Congress by parties indirectly if not directly interested, the Department of Agriculture is al-

most the only channel through which those who want land for the purpose of tilling it themselves can reach the ear of national legislation.

FARMING IN CALIFORNIA.—Our correspondent in San Joaquin County reports that in that section sheep-husbandry is the most profitable of all branches of agriculture. The wool will pay all expenses, two clips being obtained annually, each averaging from 2 to 7 pounds per head. The annual increase, which is from 70 to 100 per cent., is left for net profit. Stock-raising ranges next to sheep-husbandry in profit, or at least may be made to do so. On a ranch of 1,600 acres he keeps from 80 to 100 head of cattle. While his grain is growing they are confined in pasture. After that is harvested they run at large on the wheat and barley stubble till November. Then they are put in the dry pasture in which the straw has been housed, and on that they thrive until the rain brings grass again. With this treatment they are "good beef the year round." He adds, however, that "not one farmer in twenty-five pursues this course." On the adobe-land wheat-raising is very profitable. He has known wheat to be grown on such soil for twenty years in succession, without any apparent decrease of productiveness. The land is never plowed more than four, and more frequently not more than two, inches deep. The wheat is sown broadcast and harrowed in. He states that the raising of pork in California has been superseded by the introduction of pork raised in Missouri and Iowa over the Central and Union Pacific Railroads.

AGRICULTURAL IMPROVEMENTS AMONG THE INDIANS.—Under "the President's Indian policy," a superintendent and subagents, nominated at his request by the Society of Friends in the United States, were appointed over what are designated "the Indians of the Central Superintendency, under the care of Friends." The general agent of the executive committee of Friends on Indian affairs located at Lawrence, Kansas, makes a report covering the time of the President's first official term. It includes the condensed statistics, for the years 1868 and 1872, of the Kickapoos, Kaws, Osages, Quapaws, Peorias, Ottawas, Wyandotts, Senecas, Sacs and Foxes, Absentee Shawnees, Chippewas and Munsees, Cheyennes, Arapahoes, Wichitas, Keechies, Caddoes, Ionies, Kiowas, and Comanches. The following table indicates the industrial and general progress of these Indians for the years specified:

	1868.		1872.	
	Quantities.	Values.	Quantities.	Values.
Population	16,208	.....	17,957	.....
Number of schools	4	.....	14	.....
Number of pupils	105	.....	404	.....
Acres cultivated	3,220	.....	9,671	.....
Bushels of wheat raised	633	$1,135	3,247	$3,957
Bushels of corn	31,700	24,000	214,190	106,998
Bushels of oats	.....	.....	9,243	3,680
Bushels potatoes	1,770	1,770	15,201	7,414
Other vegetables	.....	.....	.....	7,355
Tons of hay	750	3,590	5,584	30,870
Number of horses owned	17,924	702,250	42,920	1,577,571
Number of cattle owned	640	15,200	6,604	103,804
Number of hogs owned	1,074	3,238	10,730	30,227
Total values	.....	750,581	.....	1,871,876

The report represents that each successive year, of the four covered by it, shows an increasing ratio of improvement. It also represents that with many of the Indians the means of industrial improvement came into their hands too recently for them to have more than begun farming operations, that most of the schools have been in existence too short a time for their legitimate results to be yet manifest, and that "several of these tribes have, since 1868, moved to new homes in the Indian Territory, and have, therefore, had to contend with all the retarding influences connected with the opening of farms, building houses, &c., in a wild and remote region." Yet, in spite of these drawbacks, their aggregate corn-crop for 1872 is about sevenfold greater than that of 1868, and the number of cattle and hogs owned by them about tenfold greater. In view of these facts, the agent predicts that, "should the same policy be pursued for the next four years, the improvement will be still more decided."

EXPERIMENTS IN FEEDING HOGS.—Mr. John W. Zigler, of La Porte County, Indiana, reports the results of two experiments made by him in feeding hogs, as follows: Thirty-two hogs were fed twenty-six days in an 8-acre lot. They consumed 193 bushels of unshelled old corn, 70 pounds to the bushel. Their aggregate weight at the beginning of the period was 6,420 pounds; at the end, 8,750 pounds; gain, 2,330 pounds. When he commenced feeding the hogs were worth 3½ cents per pound, amounting to $224.70; after feeding, 3.8 cents per pound, amounting to $332.50; gain, $107.80. The 193 bushels of corn, at 35 cents per bushel, cost $67.55; net profit on the corn, $40.25. Every 4⅘ pounds of (shelled) corn made one pound of pork. A live hog, weighing 428 pounds, lost by bleeding, 7 pounds; by both bleeding and dressing, 58 pounds, or a little over one-seventh of the live-weight.

Mr. Zigler also fed to 15 hogs, on the floor in pen, 100 bushels, by weight, of old shelled corn, in forty-two days. The aggregate weight of the hogs at the beginning of the experiment was 2,490 pounds; at the end, 4,260 pounds, a gain of 1,770 pounds, or 2⅘ pounds per day on hogs averaging at the commencement 166 pounds. In this experiment 3 pounds of corn made one of pork, in the other 4⅗ pounds. In the latter case the pork was sold for 10½ cents per pound.

Mr. E. Hersey, our correspondent for Plymouth County, Massachusetts, made the following experiment with a special view to ascertain at what size the gain was greatest in proportion to the amount of feed. Two pigs, six weeks old, weighing 30 pounds each, cost, $6; they consumed 33½ bushels of Indian meal, 78 cents per bushel, $26.13; 6 bushels of fine feed, 30 cents per bushel, $1.80; 12 bushels of potatoes, 25 cents per bushel, $3; cost of dressing, $2; total, $38.93. They were slaughtered when eight months old, and made 494 pounds of pork, which was sold at 8 cents per pound, amounting to $39.52; profit, 59 cents. The feed was measured and the pigs weighed daily until they reached 100 pounds each; after that they were weighed once in a week. It was found that the increase of pork cost the least per pound, namely, 4 cents, live weight, when the pigs weighed about 100 pounds each, and the most when they were at their greatest weight.

UNUSUAL CATTLE-DISEASE.—Senator Hitchcock has transmitted to this Department an account of a cattle disease, hitherto unknown in Nebraska, which appeared in Dodge County early in April. The essential facts are as follows:

The herd in which it first appeared consisted of about 150 two year old heifers and steers, chiefly Cherokee stock, with which an equal num-

ber of hogs were yarded. The inclosure in which the three hundred animals are kept contains about two acres; is dry, sufficiently sheltered, and well supplied with fresh water, and with troughs for feeding. The feed was corn in the husk and all the hay they would eat. The disease, which is limited to heifers, or cows, (both the barren and those with calf,) first shows itself in a spot, having "the appearance of dead flesh by reason of freezing," on the lowest external point of the vaginal orifice. From thence a species of ulceration gradually extends to the mouth of the womb, the lining of the vagina being covered with numerous small pimples. The eyes of the animal affected remain bright, her appetite good, and there are no other indications of disease apparent until she begins a violent switching of the tail. This is followed by nervous jerkings of the body, bellowings which are fierce and piteous by turns, biting the legs and hips, often so desperately as to tear out masses of flesh, wildness in the eyes, and a special madness toward humankind. In thirty-six to forty-eight hours from the time the spot first appears, and in twelve to fifteen from the time the switching of the tail begins, death ensues. Within a week from the time the first symptom of the disease was noticed, 28 of the Cherokee heifers and 3 of the native stock had died. Post-mortem examination failed to discover any abnormal condition beyond the vagina, except that the small intestines and parts about "the small of the back" showed some inflamation. The flesh of those that died was eaten by hogs and dogs with impunity. After trying almost every known prescription for cattle-diseases without avail, syringing the vagina "with coal-oil, or lard-oil, which is better," was found to be "a sure cure if taken in time;" that is to say all were saved to which this remedy was applied before the violent switching of the tail began, but none were saved to which it was not applied before the disease had reached that stage. In about six hours after the first injection of the oil, the pimples in the vagina begin to disappear. Up to April 30, 44 cases had terminated fatally. Whether all belonged to the herd in which the disease first appeared is not stated.

WEATHER AND COTTON IN MISSISSIPPI.—Our correspondent in Clark County writes:

> We have had the coldest April known for many years. Stand of cotton very bad and no seed to replant with. Depth of rain in April, 2.65 inches.

AUSTRALIAN EUCALYPTUS.—Our correspondent in Galveston County, Texas, to whom this Department had forwarded seeds of the Eucalyptus from Australia for trial in that section, reports favorable results thus far. The part of the seeds he retained were planted on Galveston Island, the surface of which is perfectly flat, with a light, sandy soil. In just fifteen months after the seeds were planted he had a fine lot of young trees of thrifty, rapid growth, and uninjured by the weather of last winter, which was unusually severe for that section. Several of the trees from the seed of the *Eucalyptus globulus* had attained a height of over 8 feet. Others with whom he shared the seeds have experimented, at different points on the mainland, with similar results, and much confidence is now felt in the ultimate success of growing the Eucalyptus in the Gulf counties.

MARKET PRICES OF FARM PRODUCTS.

MAY AND JUNE, 1873.

The following quotations represent the state of the market, as nearly as practicable, at the beginning of each month.

Articles.	May.	June.
NEW YORK.		
Flour, superfine State ..... per barrel..	$5 75 to $6 35	$5 65 to $6 15
extra State ..... do.....	7 00 to 8 25	6 75 to 8 15
superfine western ..... do.....	5 80 to 6 25	5 60 to 6 10
extra to choice western ..... do.....	7 00 to 12 50	6 50 to 10 30
southern ship'g, com. to choice .. do.....	6 00 to 8 25	6 25 to 8 10
southern family, ord'y to choice .. do.....	8 15 to 12 50	8 25 to 11 50
Wheat, No. 1 spring ..... per bushel..	1 75 to 1 78	1 66 to 1 69
No. 2 spring ..... do.....	1 52 to 1 67	1 55 to 1 61
winter, red, western ..... do.....	1 80 to 1 95	1 70 to 1 95
winter, amber, western ..... do.....	1 95 to 2 05	1 70 to 1 95
winter, white, western ..... do.....	1 95 to 2 35	1 90 to 2 10
Rye ..... do.....	98 to 1 00	96½ to 97
Barley ..... do.....	90 to ———	——— to 1 10
Corn ..... do.....	68 to 71½	61 to 67
Oats ..... do.....	49 to 54	48 to 58⅓
Hay, first quality ..... per ton...	26 00 to 28 00	26 00 to 28 00
second quality ..... do.....	23 00 to 25 00	22 00 to 24 00
Pork, mess ..... per barrel..	19 00 to ———	16 37½ to ———
extra prime ..... do.....	18 00 to ———	14 00 to ———
prime mess ..... do.....	18 00 to 18 50	17 00 to 17 50
Lard ..... per pound..	09¼ to 09⅝	08½ to 9 1/16
Beef, plain mess ..... per barrel..	9 00 to 11 75	9 00 to 11 50
extra ..... do.....	12 00 to 13 50	11 25 to 13 00
Butter, western ..... per pound..	32 to 35	18 to 24
State dairy ..... do.....	35 to 39	24 to 29
Cheese, western factory ..... do.....	10 to 14½	11 to 14
State factory ..... do.....	12 to 16	12 to 15¼
Cotton, ordinary to good ordinary .... do.....	15 to 16⅝	14¼ to 16½
low middling to good middl'g .. do.....	18⅜ to 22½	18¼ to 22
Tobacco, lugs, all grades ..... do.....	07 to 08½	07 to 08½
common to medium leaf ..... do.....	08½ to 10½	08½ to 10½
Wool, American Saxony fleece ..... do.....	48 to 55	48 to 55
American merino, full blood .... do.....	48 to 54	48 to 54
American, combing ..... do.....	58 to 63	58 to 63
pulled ..... do.....	28 to 48	28 to 56
California, spring clip, unwash'd .. do.....	21 to 31	20 to 31
California, fall clip, unwashed .. do.....	19 to 24	17 to 24
Texas ..... do.....	20 to 32	17 to 32
BOSTON.		
Flour, western, superfine ..... per barrel..	5 50 to 6 00	5 50 to 6 25
western extras ..... do.....	6 75 to 9 00	6 75 to 9 00
western choice ..... do.....	9 50 to 11 50	9 50 to 12 00
southern extras ..... do.....	6 75 to 7 25	7 00 to 7 50
choice Baltimore ..... do.....	10 00 to 12 00	10 00 to 12 00
Wheat ..... per bushel..	1 60 to 2 00	1 60 to 2 00
Rye ..... do.....	95 to 1 00	1 00 to 1 05
Barley ..... do.....	90 to 1 20	90 to 1 20
Oats ..... do.....	49 to 59	48 to 50
Corn, southern yellow ..... do.....	73 to 74	70 to 71
western yellow ..... do.....	73 to 74½	70 to 71
Hay, eastern and northern ..... per ton..	16 00 to 28 00	15 00 to 28 00

Market prices of farm products—Continued.

Articles.	May.	June.
BOSTON—Continued.		
Beef, western mess ..... per barrel..	$12 00 to $12 50	$12 00 to $12 50
western extra ..... do.....	13 00 to 14 00	12 00 to 12 50
Pork, prime ..... do.....	15 00 to 15 50	14 00 to 14 50
mess ..... do.....	19 50 to 20 00	17 00 to 18 00
Lard ..... per pound..	09⅜ to 10½	09½ to 09⅝
Butter, N. Y. and Vt. fair to choice new .. do.....	35 to 40	23 to 29
western, good to choice new .. do.....	35 to 38	25 to 27
Cheese, N. Y. and Vt., factory ..... do.....	11 to 16	10 to 14½
New York and Vermont dairy .. do.....	10 to 15	—— to ——
Ohio factory, good to choice .... do.....	12 to 15½	12 to 14
Cotton, ordinary to good ordinary .... do.....	13½ to 17½	12 to 17
low middling to good middling do.....	18½ to 22	18½ to 22
Tobacco, lugs ..... do.....	8½ to 10	7½ to 09
common to medium leaf .... do.....	09½ to 10½	09 to 10⅝
Wool, Ohio and Pennsylvania ..... do.....	45 to 58	45 to 60
Michigan ..... do.....	42 to 50	42 to 50
other western ..... do.....	40 to 49	40 to 49
pulled ..... do.....	20 to 50	20 to 55
combing-fleece ..... do.....	60 to 65	60 to 65
California ..... do.....	18 to 35	17 to 35
Texas ..... do.....	18 to 30	18 to 30
PHILADELPHIA.		
Flour, superfine ..... per barrel..	5 00 to 5 25	4 75 to 5 50
Pennsylvania extra ..... do.....	6 50 to ——	5 75 to 6 50
Pennsylvania family ..... do.....	8 00 to 9 00	7 87½ to 8 75
western family ..... do.....	7 75 to 9 00	8 00 to 8 75
western fancy ..... do	9 50 to 11 00	8 50 to 10 50
Wheat, winter, red, western ..... per bushel..	1 92 to 2 00	1 88 to 1 97
winter, amber, western ..... do.....	1 97 to 2 05	1 95 to 2 00
winter, white, western ..... do.....	2 00 to 2 16	2 10 to 2 15
spring ..... do.....	1 58 to 1 97	1 60 to 1 85
Rye ..... do.....	95 to ——	87 to 88
Barley ..... do.....	1 20 to ——	nominal.
Oats, western, mixed ..... do.....	47 to 49	45 to 48
western, white ..... do.....	51 to 52	48 to 51½
Corn, yellow ..... do.....	62 to 66	64½ to 65
white ..... do.....	65 to 66	65 to 67
Hay, fresh, bale ..... per ton..	30 00 to 35 00	30 00 to 35 00
common to fair shipping ..... do.....	25 00 to 30 00	25 00 to 30 00
Pork, mess ..... per barrel..	19 00 to 19 50	18 00 to 18 37½
prime extra ..... do.....	15 25 to 15 50	17 00 to 17 25
Beef, western mess ..... do.....	8 00 to 10 00	8 00 to 10 00
extra mess ..... do.....	10 00 to 12 00	10 00 to 12 00
Wartlman's city family ..... do.....	16 00 to ——	16 00 to ——
Lard ..... per pound..	9½ to 12	9½ to 12
Butter, choice ..... do.....	37 to 38	26 to 28
good ..... do.....	30 to 35	22 to 25
Cheese, New York factory ..... do.....	14½ to 15½	15 to 15½
Ohio factory ..... do.....	11 to 13	15 to ——
Cotton, ordinary to good ordinary .... do.....	14½ to 17⅜	14 to 17
low middling to good middling .. do.....	18¾ to 21⅜	17 to 21
Wool, Ohio X and XX ..... do.....	51 to 52	52 to 53
Ohio combing ..... do.....	65 to 67½	56 to ——
Virginia fine and X ..... do.....	52 to ——	—— to ——
Indiana tub-washed ..... do.....	46 to 55	52½ to ——
unwashed ..... do.....	20 to 35	31½ to ——
pulled ..... do.....	42 to 45	42 to 45

Market prices of farm products—Continued.

Articles.	May.	June.
BALTIMORE.		
Flour, superfine ..... per barrel..	$5 00 to $8 00	$5 00 to $8 00
extra ..... do.....	6 25 to 9 50	6 50 to 9 75
family and fancy ..... do.....	8 00 to 11 50	8 00 to 11 50
Wheat, white, fair to choice ..... per bushel..	1 85 to 2 10	1 85 to 2 15
amber, choice ..... do.....	2 00 to 2 05	2 05 to 2 10
red, common to prime ..... do.....	1 65 to 1 98	1 50 to 2 00
red, western ..... do.....	1 71 to 1 90	1 80 to 1 90
Rye, common to prime ..... do.....	90 to 1 00	90 to 95
Corn, yellow, southern ..... do.....	64 to ———	62 to 63
white, southern ..... do.....	67 to 68	71 to 72
mixed, western ..... do.....	64 to ———	63 to ———
Oats, southern ..... do.....	50 to 53	51 to 54
western ..... do.....	49 to 52	48 to 52
Hay, western, good ..... per ton...	26 00 to 30 00	26 00 to 30 00
Pork, mess ..... per barrel..	18 50 to 19 00	18 00 to ———
Beef, Baltimore mess ..... do.....	15 00 to 20 00	15 00 to 20 00
extra ..... do.....	23 00 to 25 00	23 00 to 25 00
Lard ..... per pound..	9½ to 10¼	9½ to 10
Butter, New York ..... do.....	25 to 28	28 to 30
choice, western ..... do.....	25 to 28	— to 28
good to prime western ..... do.....	20 to 25	20 to 22
Cheese, eastern, jobbing lots ..... do.....	16½ to 17	15 to 15½
western ..... do.....	13 to 15	13½ to 14½
Cotton, ordinary to good ordinary ..... do.....	13 to 16⅝	13 to 16¼
low middling to middling ..... do.....	18¼ to 19¼	18 to 19¼
Tobacco, lugs, ... per cental..	7 50 to 9 50	7 50 to 9 50
common to medium leaf ..... do.....	8 50 to 11 00	8 50 to 11 00
Wool, fleece, washed, com. to fine ... per pound..	45 to 50	——— to ———
tub-washed ..... do.....	40 to 45	40 to 45
unwashed ..... do.....	25 to 30	25 to 33
pulled ..... do.....	30 to 37	30 to 37
CINCINNATI.		
Flour, superfine ..... per barrel..	5 25 to 6 00	5 50 to 6 00
extra ..... do.....	7 00 to 7 60	7 15 to 7 60
family and fancy ..... do.....	8 00 to 9 25	7 60 to 9 25
Wheat, red winter, No. 1 ..... per bushel..	1 76 to 1 78	1 65 to ———
red winter, No. 2 ..... do.....	1 70 to 1 72	1 55 to 1 60
hill ..... do.....	——— to 1 80	1 70 to ———
white winter ..... do.....	——— to 1 95	1 75 to ———
Rye ..... do.....	83 to 85	78 to 80
Barley ..... do.....	75 to 1 10	70 to 1 00
Corn ..... do.....	48 to 50	47 to 50
Oats ..... do.....	44 to 45	38 to 45
Hay, baled, No. 1 ..... per ton....	19 00 to 23 00	18 00 to 19 00
lower grades ..... do.....	15 00 to 18 00	15 00 to 17 00
Beef, plate ..... per barrel..	13 00 to 14 00	13 50 to 14 00
Pork, mess ..... do.....	18 00 to 18 50	16 00 to 16 75
Lard ..... per pound..	8¾ to 9½	8½ to 9
Butter, choice ..... do.....	30 to 33	20 to 22
good to prime ..... do.....	25 to 27	15 to 17
Cheese, factory ..... do.....	12½ to 13½	12 to 13
pine-apple ..... do.....	22 to ———	——— to ———
Cotton, ordinary to good ordinary ..... do.....	12 to 15½	12 to 15
low middling to good middl'g do.....	17¼ to 19¾	17½ to 19½
Wool, common to medium washed ... do.....	35 to ———	35 to ———
medium to fine washed ..... do.....	——— to 40	——— to 40
tub-washed ..... do.....	40 to 43	40 to 43
unwashed, clothing ..... do.....	25 to 27	25 to 27
unwashed, combing ..... do.....	30 to 35	30 to 35
pulled ..... do.....	33 to 35	33 to 35

Market prices of farm products—Continued.

Articles.	May.			June.		
CHICAGO.						
Flour, white win'r, ex. f'r to choice, per barrel	$8 00	to	$10 50	$8 50	to	$11 00
red winter, extra, do	7 00	to	8 50	7 00	to	8 50
good to choice spring, extra, do	6 00	to	6 75	6 25	to	7 50
spring, superfine, do	2 90	to	4 75	3 00	to	5 00
good to fancy Minnesota, do	6 50	to	8 00	6 50	to	8 50
Wheat, No. 1 spring, per bushel	——	to	——	1 35	to	1 35½
No. 2 spring, do	1 25½	to	1 25	1 30	to	——
No. 3 spring, do	1 15	to	1 15½	1 19	to	1 20
Rye, No. 2, do	69	to	69½	68½	to	——
Barley, No. 2, do	71½	to	81	70	to	78
Corn, No. 2, do	30½	to	31½	38½	to	39½
Oats, No. 2, do	37½	to	38⅝	32¼	to	32½
Hay, timothy, per ton	15 00	to	17 00	15 50	to	17 50
prairie, do	12 00	to	17 00	12 00	to	16 00
Pork, mess, per barrel	18 00	to	18 05	16 15	to	16 20
Beef, mess, do	9 00	to	9 25	9 00	to	9 25
extra mess, do	10 00	to	10 25	10 00	to	10 25
Lard, per cental	9 05	to	9 10	8 70	to	——
Butter, strictly choice, per pound	32	to	35	23	to	25
common to choice roll, do	24	to	30	——	to	——
Cheese, New York factory, do	15	to	16	12½	to	13½
Elgin factory, do	——	to	——	12½	to	13½
Ohio factory, do	13	to	14	11	to	12½
western factory, do	12	to	14	11	to	12½
Wool, tub-washed, do	45	to	55	45	to	52
fleece-washed, do	37	to	47	37	to	45
unwashed, do	27	to	33	27	to	39
pulled, do	38	to	43	38	to	44
SAINT LOUIS.						
Flour, winter, superfine, per barrel	3 50	to	5 35	3 60	to	4 00
winter, extras, do	6 25	to	7 50	5 75	to	7 00
winter, choice and family, do	8 00	to	9 25	8 00	to	8 87½
Wheat, red winter, No. 1, per bushel	1 72	to	1 80	1 65	to	1 72
red winter, No. 2, do	1 70	to	1 78	1 60	to	1 65
spring, No. 2, do	1 25	to	1 30	1 30	to	——
Rye, No. 2, do	68	to	——	65	to	70
Barley, do	90	to	1 00	65	to	70
Corn, do	37½	to	46½	37	to	48
Oats, do	31	to	33	32	to	42½
Hay, shipping and choice timothy, per ton	16 00	to	——	17 50	to	20 00
prime, do	13 50	to	——	17 50	to	——
Pork, mess, per barrel	18 50	to	——	16 75	to	17 50
Beef, mess, do	14 00	to	——	14 00	to	——
Lard, per pound	7½	to	10½	7½	to	9
Butter, prime to strictly choice, do	——	to	——	19	to	22
choice packed, do	26	to	30	15	to	18
Cheese, factory, do	14	to	15½	——	to	——
Cotton, middling, do	18½	to	18½	18	to	18½
Wool, tub-washed, do	43	to	50	42	to	47
fleece, washed, do	——	to	——	38	to	45
unwashed, clothing, do	25	to	30	——	to	——
unwashed, combing, do	35	to	——	32	to	35
Tobacco, lugs, per cental	——	to	——	4 00	to	6 00
common to medium leaf, do	——	to	——	6 25	to	8 00
NEW ORLEANS.						
Flour, superfine, per barrel	5 50	to	——	5 50	to	5 75
extras, do	5 75	to	8 25	6 00	to	7 75
choice, do	8 50	to	10 00	8 25	to	9 50
Corn, white, per bushel	57	to	59	57	to	58
yellow, do	57	to	58	57	to	——

Market prices of farm products—Continued.

Articles.	May.	June.
NEW ORLEANS—Continued.		
Oats ..... do	$0 43 to $0 44	$0 45 to $0 46
Hay, choice ..... per ton	27 00 to 28 00	25 00 to ———
prime ..... do	23 00 to 25 00	21 00 to 25 00
Pork, mess ..... per barrel	18 50 to 19 00	17 25 to 17 50
extra prime ..... do	——— to ———	——— to ———
Beef, Texas ..... do	11 00 to 12 00	11 00 to ———
western ..... do	14 00 to 15 00	14 00 to 15 00
Lard ..... per pound	8¾ to 10¾	9½ to 10½
Butter, choice western ..... do	40 to 45	26 to 28
choice Goshen ..... do	50 to ———	36 to 38
Cheese, choice factory ..... do	13 to ———	12 to 14
New York cream ..... do	18 to 19	——— to ———
Cotton, ordinary to good ordinary ..... do	12¾ to 15¾	12 to 16
low middling to good middling .do	17¼ to 20	16¾ to 19⅝
Tobacco, lugs ..... do	8 to 8½	7¼ to 9
low-leaf ..... do	9 to 9½	9 to 10
medium-leaf ..... do	10 to 10½	10 to 11
Wool, lake ..... do	25 to 26	30 to ———
Louisiana, clean ..... do	20 to ———	23 to ———
SAN FRANCISCO.		
Flour, superfine ..... per barrel	5 00 to ———	4 50 to 5 25
extra ..... do	5 25 to 5 50	5 25 to 5 50
higher grades ..... do	——— to ———	5 75 to 6 00
Wheat, State ..... per cental	1 75 to 1 90	1 85 to 1 90
Oregon ..... do	1 75 to 1 85	1 85 to 1 90
Barley ..... do	1 15 to 1 40	1 25 to 1 50
Oats ..... do	2 15 to 2 35	1 35 to 2 10
Corn, white ..... do	1 15 to ———	1 25 to 1 30
yellow ..... do	1 12½ to 1 15	1 25 to 1 30
Hay, State ..... per ton	21 00 to ———	10 00 to 21 00
Pork, mess ..... per barrel	19 00 to 19 50	18 00 to 18 50
prime mess ..... do	18 50 to ———	17 00 to 17 50
Beef, mess ..... do	10 00 to 12 00	10 00 to 12 00
Lard ..... per pound	10¼ to 12½	10½ to 12
Butter, overland ..... do	15 to 20	15 to 18
California ..... do	25 to 30	25 to 32½
Oregon ..... do	15 to 18	15 to 18
Cheese ..... do	12 to 16	12 to 14
Wool, native ..... do	11 to 14	12 to 15
California ..... do	18 to 22	18 to 22
Oregon ..... do	18 to 22	18 to 22

LIVE-STOCK MARKETS.

NEW YORK.		
Cattle, choice steers ..... per cental	$13 00 to ———	——— to ———
second picks ..... do	12 50 to ———	——— to ———
general range of native cattle .do	11 00 to $12 00	$11 00 to $12 50
Texans and Cherokees, dressing from 55 to 56 pounds ..... per cental	10 50 to 11 00	——— to ———
Sheep, shorn ..... do	4 50 to 6 25	5 50 to 6 62½
nushorn ..... do	6 00 to 7 00	——— to ———
spring lambs ..... do	7 00 to 8 50	10 00 to 14 00
Hogs, good, corn-fed ..... do	6 00 to ———	7 00 to 7 25

Live stock markets—Continued.

	May.		June.	
BOSTON.				
Cattle, choice, live weight.....per cental..	$10 50 to $11 00		$7 50 to $7 75	
extra, live weight .....do.....	9 50 to 10 25		7 00 to 7 25	
first quality, live weight.....do.....	8 00 to 9 00		6 37 to 6 62	
second quality, live weight....do.....	6 00 to 7 50		5 25 to 6 00	
third quality, live weight ....do.....	5 00 to 5 50		4 50 to 5 00	
working-oxen.....per pair..	100 00 to 275 00		100 00 to 275 00	
milch cows with calves.....per head..	35 00 to 60 00		35 00 to 60 00	
milch cows, extra.....do.....	65 00 to 87 00		65 00 to 90 00	
farrow cows.....do.....	15 00 to 40 00		15 00 to 40 00	
yearlings .....do.....	10 00 to 18 00		10 00 to 18 00	
two-year-olds .....do.....	19 00 to 28 00		19 00 to 28 00	
three-year-olds.....do.....	30 00 to 45 00		30 00 to 45 00	
veal calves.....do.....	4 00 to 13 00		3 00 to 10 00	
Sheep, in lots .....do.....	3 50 to 4 50		3 00 to 4 50	
Hogs, western, fat.....per cental..	6 25 to 6 50		6 00 to 6 25	
PHILADELPHIA.				
Cattle, common to good beeves ...per cental..	5 00 to 7 00		4 00 to ———	
extra to choice .....do.....	7 25 to 8 50		——— to 8 00	
Sheep, fair to choice wooled.....do.....	7 00 to 8 00		——— to ———	
clipped .....do.....	4 50 to 6 50		5 00 to 6 25	
Hogs, corn-fed .....do.....	8 50 to 8 75		8 00 to 8 25	
slop-fed .....do.....	7 50 to 8 00		7 00 to 7 50	
BALTIMORE.				
Cattle, best beeves.....per cental..	6 25 to 7 25		6 12 to 7 12	
first quality.....do.....	5 50 to 6 25		5 37 to 6 12	
medium, or good fair quality..do.....	5 00 to 5 50		5 00 to 5 37	
general average .....do.....	6 25 to ———		6 00 to ———	
general range of sales.....do.....	5 75 to 6 75		4 50 to 7 12	
Sheep, wooled.....do.....	6 00 to 7 00		——— to ———	
clipped .....do.....	4 50 to 6 75		——— to ———	
fair to good .....do.....	——— to ———		4 50 to 6 25	
good to extra .....do.....	——— to ———		6 00 to 6 50	
Hogs, corn-fed .....do.....	7 50 to 8 25		7 50 to 7 75	
still-fed, net.....do.....	7 25 to 7 75		7 00 to 7 25	
CINCINNATI.				
Cattle, fair to prime shipping.....per cental..	5 50 to 6 00		5 00 to 5 75	
Sheep, good to choice.....do.....	5 00 to 7 00		4 50 to 6 50	
common to fair.....do.....	4 00 to 5 00		3 50 to 4 50	
lambs .....per head..	——— to ———		3 50 to 6 00	
Hogs, choice.....per cental..	5 90 to 6 00		——— to 5 25	
CHICAGO.				
Cattle, extra graded steers, 1,400 pounds and upward.....per cental...	5 90 to 6 15		5 80 to 6 10	
choice beeves, fine, fat, well-formed, 3 to 5 years old, 1,300 to 1,450 pounds... .....per cental..	5 50 to 5 70		5 50 to 5 70	
good beeves, well-fattened, finely formed steers, 1,200 to 1,300 pounds, per cental..	5 10 to 5 35		5 25 to 5 40	
medium grades, steers fair in flesh, 1,100 to 1,250 pounds...per cental..	4 80 to 5 00		4 80 to 5 15	
butchers' stock, common to fair steers and good to extra cows, 800 to 1,100 pounds .....per cental..	4 00 to 5 00		4 00 to 5 25	

Live Stock Market—Continued.

	May.			June.		
CHICAGO—Continued.						
Cattle, stock cattle, 700 to 1,080 pounds per cental	$3 85	to	$4 90	$3 75	to	$4 90
inferior ... do	3 00	to	4 00	3 00	to	3 75
Texans, north-wintered ... do	4 00	to	4 50	4 00	to	4 50
Texans, corn-fed ... do	4 65	to	5 00	4 65	to	5 25
Hogs, good to choice ... do	5 25	to	5 30	4 85	to	4 90
Sheep, poor to choice ... do	4 00	to	6 50	——		——
SAINT LOUIS.						
Horses, driving animals, good to extra, per head	100	to	200	100	to	225
common to fair ... do	90	to	125	85	to	110
draught animals, heavy to extra heavy, per head	125	to	225	120	to	220
Mules, good heavy animals ... do	135	to	175	125	to	165
extra ... do	200		——	200		——
Cattle, choice native-blood steers, 1,300 to 1,600 pounds ... per cental	6 00	to	6 50	5 75	to	6 00
prime second-class, 1,150 to 1,400 pounds ... per cental	5 50	to	6 00	5 25	to	5 75
good third-rate native-blood, 1,050 to 1,300 pounds ... per cental	4 50	to	5 00	4 50	to	5 00
fair butchers' steers, 1,000 to 1,200 pounds ... per cental	4 00	to	4 50	4 50	to	4 70
thrifty stock steers, 900 to 1,300 pounds ... per cental	4 00	to	4 50	4 50	to	5 00
inferior ... do	2 00	to	4 00	2 50	to	4 50
good to choice corn-fattened Texans, per cental	3 50	to	5 50	4 50	to	5 00
veal calves ... per head	6 00	to	10 00	7 00	to	10 00
milch cows with calves ... do	25 00	to	60 00	25 00	to	60 00
Sheep, extra mutton grades ... per cental	6 50	to	6 75	5 50	to	6 50
common to good ... do	3 50	to	5 75	4 50	to	5 00
Hogs, extra grades, gross weight ... do	5 30	to	5 35	4 65	to	4 70
fair to good ... do	5 10	to	5 25	4 55	to	4 60
common to medium ... do	4 95	to	5 00	4 35	to	4 40
NEW ORLEANS.						
Cattle, choice Texas beeves ... per head	50 00		——	50 00		——
first quality ... do	35 00	to	45 00	35 00	to	45 00
second quality ... do	20 00	to	28 00	20 00	to	25 00
third quality ... do	15 00	to	18 00	15 00	to	18 00
Western beeves, net ... per cental	10 00	to	12 50	10 00	to	12 50
milch cows, choice ... per head	80 00	to	100 00	80 00	to	100 00
milch cows ... do	35 00	to	50 00	35 00	to	50 00
calves ... do	8 00	to	12 00	8 00	to	12 00
yearlings ... do	10 00	to	14 00	10 00	to	14 00
Sheep, first quality ... do	5 00	to	6 00	5 00	to	6 00
second quality ... do	3 00	to	4 05	3 00	to	4 05
third quality ... do	2 00	to	2 10	2 00	to	2 10
Hogs, gross ... per cental	6 00	to	7 00	6 00	to	7 00

FOREIGN MARKETS.

WHEAT.—The month of April opened, in the London market, with moderate stocks of English wheat but with good supplies of foreign, one-half of which were American. The foreign trade, however, was

limited, and the floating-cargo trade in favor of buyers. The weather during the first and third weeks was favorable for wheat growth and quite the reverse during the alternate weeks. During the first week the London averages were 55*s.* 3*d.* on 2,041 quarters, and during the fourth week 55*s.* 1*d.* on 3,696 quarters. The imports of wheat into the United Kingdom during the four weeks ending April 26 amounted to 2,168,664, the import trade showing a very great decline in the last week. The interior markets of England about the close of the month manifested an increased activity in the wheat-trade, the advance of prices averaging about a shilling per quarter. The decreased import caused a firmer feeling in foreign grain in the London markets, but as the weather began to clear up and the prospect of home crops to brighten, the tone of the market became less buoyant and confident. The wheat-trade of Paris, which at the first of the month showed a tendency to higher prices, settled down quietly to a steady range. Prices were steady also at Marseilles, but rose with fine weather at the close of the month. The month closed at Odessa with moderate supplies at full rates.

At Liverpool, American white wheat ranged from 13*s.* to 14*s.* per cental; red winter and southern, 12*s.* to 12*s.* 6*d.*; spring No. 1, 11*s.* 10*d.* to 12*s.* 6*d.*; spring No. 2, 11*s.* 3*d.* to 11*s.* 10*d.*; Canadian white, 11*s.* 8*d.* to 13*s.*; Canadian red, 12*s.* to 12*s.* 6*d.*; California white, 11*s.* 4*d.* to 12*s.* 3*d.*; Chilian white, 11*s.* 4*d.* to 11*s.* 9*d.*; French white, 12*s.* 6*d.*; French red, 11*s.* 7*d.* to 12*s.* 1*d.*; Spanish, 12*s.* to 12*s.* 2*d.*; Danubian, 7*s.* to 9*s.*

Flour.—The standing flour quotations of the London market were as follows: Best town households, per sack of 280 pounds, 47*s.* to 54*s.*; best country households, 44*s.* to 47*s.*; Norfolk and Suffolk, 38*s.* to 42*s.* In Liverpool, English and Irish superfines ranged from 40*s.* to 42*s.* per 280 pounds; extras, 43*s.* to 51*s*; French, 48*s.* to 53*s.* 6*d.*; Spanish, 47*s.* to 47*s.* 6*d.*; Trieste and Hungarian, 64*s.* to 76*s.*; Chilian and Californian, 42*s.* to 48*s.*; American, per barrel of 196 pounds, western, 28*s.* 6*d.* to 31*s.*; extra, 30*s.* to 34*s.*; Baltimore and Philadelphia, 30*s.* to 35*s.*; Ohio, 31*s.* to 35*s.* The Paris market from a state of steadiness gradually rose, the later quotations being 44*s.* 2*d.* to 48*s.* 8*d.* per 280 pounds.

Indian corn.—In Mark Lane, London, the regular quotations for Indian corn were the same as in our April report, 31*s.* to 33*s.* per quarter for white; yellow, 26*s.* to 28*s.* In Liverpool, at the close of the month, American white brought from 30*s.* to 31*s.*; yellow, 27*s.* 6*d.* to 28*s.*; Trieste, 27*s.* 6*d.* to 28*s.*; Danubian, 27*s.* 6*d.* to 29*s.*; Galatz, 28*s.* 6*d.* to 29*s.* 6*d.*

Wool.—English wool was steady in price, Southdown hoggets ranging, at the close of the month, from 1*s.* 10*d.* to 1*s.* 11*d.* per pound; Kent fleeces, 1*s.* 10*d.* to 1*s.* 11½*d.*; Southdown ewes and wethers, 1*s.* 7½*d.* to 1*s.* 8*d.*; Leicester, 1*s.* 9*d.* to 1*s.* 10*d.* The second series of colonial wool sales in London opened April 28 with a large number of English and foreign buyers. The catalogue embraced 7,000 bales—2,500 Port Philip, 1,200 Sydney, 1,400 Adelaide, 1,600 Cape, 300 New Zealand. The competition was spirited, and Australian washed wools maintained their position.

Butter.—The later quotations were, for Dorset, 136*s.* to 140*s.* per cwt.; Friesland, 130*s.* to 134*s.*; Jersey, 112*s.* to 130*s.*

Cheese.—Cheshire, 70*s.* to 84*s.* per cwt.; Double Gloucester, 66*s.* to 80*s.*; Cheddar, 76*s.* to 94*s.*; American, 56*s.* to 80*s.*